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MASTER THESIS

Appointment scheduling for blood donors in combination with walk-in donors

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Abstract

Sanquin is a Dutch blood bank. At Sanquin whole blood donors come on walk-in basis. In the near future it is planned to make an online agenda system. Not all donors will come with an appointment. The aim is to have about 80% of the whole blood donors coming with an appointment, the remaining 20% keeps coming on walk-in basis. For the agenda system it has to be decided which time slots should be open for donors to make an appointment. Low waiting times are important to keep the donors satisfied. Therefore two waiting time models are made. The donation process of whole blood donors and plasma donors is partly the same, the donor streams are mixed. So plasma donors are also incorporated in the waiting time models. Plasma donors only come with appointment, this will stay the same in the future. The first waiting time model models each phase of the donation process as a non-preemptive M/M/c queue with priorities. Plasma donors already have priority on whole blood donors. To stimulate appointment making whole blood donors with appointment will have priority on whole blood donors without appointment. The first waiting time model uses the Laplace-Stieltjes transform of the waiting time. To get the waiting time distribution the inverse Laplace-Stieltjes transform has to be calculated. This has to be done numerically, which gives a high computation time. This will be a problem when used in practice. Therefore a second waiting time model is made, that models each donor class per phase (of the donation process) as an M/M/1 queue. To keep the priorities capacity reservation is done. The results of the waiting time models are used to rate an appointment schedule. The lower the rate, the better the schedule. To find a good appointment schedule a heuristic is made to generate schedules. Appointment schedules are generated and evaluated until a good enough schedule has been found. For both waiting time models the assumption is made that the phases of the blood donation process are independent, which is not the case in practice. A simulation model is made to verify how good/bad this assumption is. Also a simulation model is made to get an indication of how the determined appointment schedule will work out in practice.

Contents

1	Introduction	3
1.1	Motivation of research	3
1.2	Thesis Outline	3
2	Literature review	4
2.1	Appointment scheduling	4
2.2	Blood donation	4
2.3	Waiting time models	4
3	The blood donation process	6
4	Analysis of arrival patterns and service time distribution	7
4.1	Arrival patterns	7
4.2	Service time distribution	8
5	Waiting time models	10
5.1	Network of non-preemptive M/M/c queues with priorities	10
5.2	Network of M/M/1 queues with capacity reservation	11
6	Schedule model	12
6.1	Heuristic to generate schedules	12
6.2	Rating schedules	15
6.3	Heuristic to determine schedule	17
7	Simulation models	19
7.1	First simulation model	19
7.2	Second simulation model	20
7.3	Determining number of runs	22
8	Results	23
8.1	Comparing waiting time models section 5.1 and 5.2	23
8.2	Simulation model 1	24
8.3	Simulation model 2	24
8.4	Schedules with different penalty functions	27
9	Conclusion and Recommendations	29
9.1	Conclusion	29
9.2	Recommendation	30
	APPENDICES	33
A	Schedules and waiting time probabilities from section 8	33
0.1		34
0.2		35
0.3		36
0.4		37

0.5		38
0.6		39
0.7		40
0.8		41
0.9		42
0.10		43
0.11		44
0.12		45
0.13		46
0.14		47
0.15		48

B	Arrival patterns analysis fixed locations	49
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C	Opening hours fixed locations	414
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1 Introduction

1.1 Motivation of research

Sanquin is a company that takes care of blood donation to fulfil the demand for blood products. To collect blood Sanquin has fixed and mobile locations. At most fixed location plasma and whole blood donation can be done. At mobile locations only whole blood donations can be done. Plasma donors always come with an appointment. Whole blood donors come on walk-in basis. A whole blood donor is invited to donate, within a certain time frame the donor can decide if he/she comes and when.

In the near future there will be an online appointment system, such that whole blood donors can make an appointment. Sanquin decided which part of the agenda will be open for a donor. Within this period the donor is free to choose a day and time. To come without appointment will remain possible. The aim is to have 80% of appointments, the remaining 20% will come on walk-in basis. To stimulate whole blood donors to make an appointment, whole blood donors with appointment will get priority over whole blood donors without appointment. Plasma donors already have priority over whole blood donors, this will stay the same in the future.

The aim of this resource is to determine which appointment possibilities, slots, should be open for donors to make an appointment. For blood donors it is important that the waiting time at the blood donation location is low. So waiting should be taken into account. There has to paid attention to the possibility of no-shows. Further the targets, number of blood donation per week needed, should be met. The percentage of no-shows is known for each location. Depending on this percentage, it is determined how many donors should be asked to donate to meet the targets.

1.2 Thesis Outline

In this thesis the focus will be on appointment scheduling for whole blood donors, taking into account the waiting time a donor has to face at the donation location. In section 2 a review will be given of the available literature on appointment scheduling for blood donation. This will extended with some literature on appointment scheduling in health care and some literature of waiting time distributions for more general queues. For the current situation with 100% walk-in donors the arrival patterns are analysed in section 4. In the same section also service time distributions are fitted using the service time data. One of the queueing models from literature is used to evaluate waiting time for the blood donation system. This non-preemptive $M/M/c$ queueing model with priorities is explained in section 5. In the same section another queueing model to evaluate waiting time is explained, this model uses $M/M/1$ queues. Then in section 6 the heuristic for generating appointment schedules will be discussed. Also the method of rating those schedules will be discussed. To rate a schedule an cost function is defined that uses the waiting time probabilities. Those waiting time probabilities are calculated with the waiting time models from section 5. In section 6.3 a heuristic is defined to calculate a good schedule. This heuristic uses the heuristic of section 6 to generate schedules. The waiting time models from section 5 are used for to rate the schedules with the cost function from section 6. Further in section 7 two simulation models are defined. The first simulation model is to verify an assumption that has to be done for both waiting time models. The second simulation model is used to get an indication of the determined appointment schedule in practice. Then in section 8 a test case is defined to compare the two waiting time models. The same test case is also used for the two simulation models. The results are analysed. Finally a conclusion of this thesis is drawn and some recommendation for further research are done.

2 Literature review

Appointment systems are applied in many areas of healthcare. Those appointment systems can take into account scheduled/unscheduled arrivals, patients with priorities, no-shows and punctuality of the patients. All of these elements are also needed for a appointment system at blood collection sites. Therefore, this section has been split into three parts. First, in section 2.1, attention is paid to some articles about appointment systems in healthcare. Then, in section 2.2, the focus will be on the literature around scheduling appointments for blood donation. Finally, in section 2.3, the literature of two waiting time models that can be used for modelling waiting time for blood donors will be discussed. The second waiting time model is used in this thesis and will be explained more in section 5.1.

2.1 Appointment scheduling

Appointment scheduling for the blood donation process has rarely been discussed in literature, but in a broader healthcare setting it is quite extensively studied. In (1) a review of literature is given on appointment scheduling in outpatient clinics.

The more basic models consider one type of patients, who only have to go to one service point (e.g. a doctor) and have an appointment (e.g. (2)). These basic models are extended with the possibility of no-shows (e.g. (3, 4, 5)) and punctuality of patients (e.g. (4, 6)). In (7, 8) a combination of scheduled and unscheduled patients are considered. Further in (7, 8, 9) patients with different priorities are handled.

In (10) appointment scheduling is done with a model considering two time periods. Included, a time scale for appointment planning (long term) and one for the service process during the day (short term). This way, both the arrivals of scheduled and unscheduled patients can be taken into account. The different time scales give the possibility to measure access time, time between making the appointment and having the appointment, and waiting time during the day. No-shows are also taken into account.

2.2 Blood donation

To plan appointments, insight in the arrival patterns of blood donor is required. In (11, 12, 13, 14) these arrival patterns are studied. In (11) data mining is used, while in (12) logistic regression is used. In (13, 14) the arrival patterns are studied by analysing the patterns visually.

A few papers use simulation to study the blood collection site (13, 14, 15, 16, 17). The simulation models are made to study and improve the current donation process. In (14) also an LP model is used for determining the minimal number of staff members needed to handle the arriving donors and satisfy the waiting time norm. With these simulation models most existing literature about simulation models for the blood donation system is covered. Waiting time is an important performance metric for blood collection sites. To keep blood donors satisfied the waiting time should be as low as possible. In (18) a waiting time model is derived for whole blood donors coming on walk-in basis.

Analytic models to schedule blood donors are introduced in (19, 20). These are the only analytic scheduling models in the literature of blood donation. In (19, 20) the models consists of scheduled arrivals and walk-in arrivals. Further they have a stability condition, the workload should always be smaller than one. All donor types have the same priority. The models takes into account no-shows. In (19) an mixed integer non linear programming (MINLP) model is used to schedule donors and reduce waiting time. The blood donation process is modelled as an open Jackson network. An approximation of total waiting of donors arriving at a phase of the donation process in a time interval is used. In (20) a multi-criteria mixed integer programming (MIP) model is used to schedule donors and reduce waiting time and overtime (working after opening hours).

2.3 Waiting time models

Waiting time is an significant factor in the satisfaction level of blood donors. A waiting time model that fits the situation is therefore important. The phases of the blood donation process can be modelled with a so-called multi class accumulating priority queue, as introduced by (21, 22, 23, 24, 25). These papers consider a Poisson arrival process and general service time distributions. In examples often an exponential service time distribution is assumed. Each patient class has a basic priority level. A higher priority class has a higher basic priority level than an lower class patient. Higher priority classes accumulate "priority points" faster than lower priority classes. In

this way a donor of a lower class can have a higher priority than higher class donor. If a server finishes a service, it starts serving the patient that has accumulated the most "priority points" since its arrival. This means that a lower priority class patient does not have to wait until all higher class patients are served, waiting time gives a lower class patient more priority. The waiting time distribution is given via the LST (Laplace-Stieltjes transform) of the waiting time distribution. The accumulating priority system is method used for blood donation. At a blood donation location for plasma and whole blood donation, plasma donors have priority over whole blood donors. So normally a plasma donors will be first to get service. Sometimes, if a whole blood donor has to wait really long, a staff member handles a whole blood donor first. In (23) there is a common service rate, they treat a $M/M/c$ queue. In the articles (24, 25) the service time is exponentially distributed and the average service duration is class dependent, which can be denoted as an $M/M_i/c$ queue. Only in the article (22) a general service time distribution is discussed with a class dependent service rate, but they limit to one queue ($M/G_i/1$).

Another way to model the blood collection process is by using a general priority queue. In the articles (26, 27, 28, 29) the multi-class non-preemptive $M/M/c$ queue is discussed, in (30) the multi-class non-preemptive $M/G/1$ queue. In (26, 27, 30) the waiting time is calculated via the LST of the waiting time distribution. The waiting time density function and waiting time probability distribution are derived in (28). To calculate the waiting time distribution elementary lattice paths counting is used. The LST corresponding to the derived waiting time distribution is calculated to show it coincides with the one derived in (27). In (29) the probability function from (28) is specified for two classical priority queues, the non-preemptive $M/M/c$ queue with equal service rates and the non-preemptive $M/M/1$ queue with different service rates.

3 The blood donation process

In this section the blood donation process will be explained. Two types of blood donation are considered, whole blood donation and plasma donation. The focus is on whole blood donation, since appointment scheduling for whole blood donors is done in this thesis. The donation processes of whole blood and plasma donation are partly mixed, therefore also plasma donation will play a part. Both types of donors enter the building and start in the waiting area of the registration. The donors stand in line, until the staff member at the registration desk is available. The donor will be registered and gets a questionnaire. Between the registration desk and the medical check there is a area where donors can sit down to fill in the questionnaire. After the questionnaire is filled in the donor goes to the waiting area of the medical check. At the medical check area there are several rooms. A donors enters one of the rooms and a staff member will do some tests and goes through the filled in questionnaire. To donate blood the donation has to be safe for the donor and the recipient. The donated blood has to fulfil certain criteria. On the questionnaire there are questions to get this information. If the donor does not pass the medical check then a donor is deferred. Depending on the situation a donor is invited to come back when the blood donation criteria can be met or the donor must end his/her donation career. If a donor passes the medical check then the donor can go to the donation area. There are some chairs to sit down while waiting on a bed. At the donation area are beds with donation equipment besides them. Part of the beds can be used for plasma donation, the remainder can only be used for whole blood donation. When a bed is available the donor can lie down. The first available staff member will connect the donation equipment and the donation starts. After a certain amount of blood/plasma is donated, the machine will be uncoupled. The donor can go to the canteen area to have something to drink and eat before going home. This to make sure the donor is al right The registration and medical check is the same for whole blood donors and plasma donors, both types use the same resources. At the donation the two types are separated, because more equipment is required for plasma donation. The whole donation process is shown in figure 1.

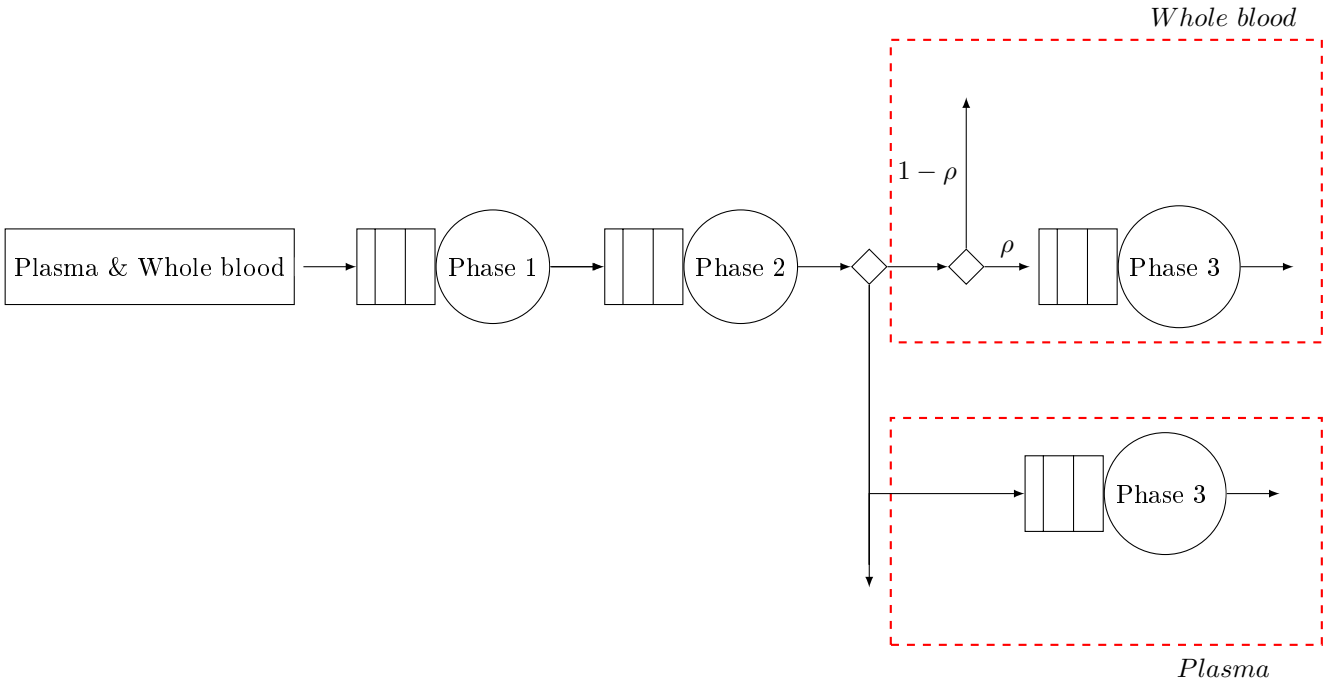


Figure 1: Phase 1: Registration&Form, Phase 2: Medical check and Phase 3: Donation

Blood donation locations are not open in the weekend. Depending on the size of a location the opening days and hours are determined. The size of a location is measured by the target level of donations per week. There are several possibilities for opening hours of a location. One combination of opening and closing time is called a session. There are seven session possibilities : 8.00-11.00, 12.30-15.30, 17.00-20.00, 8.00-15.30, 8.00-11.00 & 17.00-20.00, 12.30-20.00 and 8.00-20.00.

4 Analysis of arrival patterns and service time distribution

In this chapter an analysis of the arrival patterns of donors and the service time is discussed. This analysis is done with data from 2015 of all fixed locations in the Netherlands. This data is from the official database of Sanquin.

4.1 Arrival patterns

As the situation is now, whole blood donor come on walk-in basis. This makes the arrival process uncertain. As already explained in section 1.1, in the near future there will be plasma donors and whole blood donors with and without appointment. To get a good mix of these three donor types, the arrival pattern of whole blood donors in the current situation (only walk in) will be analysed.

As explained in section 3 each blood donation location has certain sessions at which the location open. Arrival patterns are analysed per location. At each location (almost) all days of the same type have the same session. The type of day is Monday, Tuesday, Wednesday, Thursday or Friday. Therefore first will be studied if the arrival patterns are similar for all days of the same type. To statistically check if two arrival patterns are the same, so if they come from the same continuous distribution, the two-sample Kolmogorov-Smirnov test is used. The null hypothesis is that the data in vectors x and y come from the same continuous distribution, the alternative hypothesis that the data come from different continuous distributions. If the null hypothesis is not rejected the two-sample Kolmogorov-Smirnov test returns the test decision 0, otherwise 1. Per location all days of the same type are compared, so if there are N type r days then the results can be put in a $N \times N$ matrix, say A . For example at entry (n, m) , with $1 \leq n, m \leq N$, of matrix A , there is the test result of a type r day number n compared to a type r day number m . Per type r day it is calculated what percentage of a type r days is not the same as the type r day considered. This is calculated with equation 1a. The results can be put in a $N \times 1$ matrix, say B . For example at entry $(n, 1)$ of matrix B , there is the percentage of type r days not the same as type r day number n . The smaller the percentages in B , the more likely that the arrival patterns of days of type r are similar for the location considered.

$$B(i, 1) = \frac{\sum_{j=1}^N A(i, j)}{N} \cdot 100\% \quad \forall i = 1, \dots, 49 \quad (1a)$$

$$\frac{\sum_{i=1}^N \mathbb{1}(B(i, 1) > 0.1)}{N} \cdot 100\% \quad (1b)$$

To decide if the arrival patterns of days of type r can be considered the same, the percentage of rates bigger than 0.1 in matrix B is calculated with (1b). If the percentage determined with (1b) is smaller than 15% the arrival patterns of days of type r are considered to be the same. For 91% of the fixed locations the arrival patterns of days of the same type (and the with the same session) can be considered the same with this definition. This means that it is reasonable to conclude that days of the same type (with the same session) have similar arrival patterns.

The next step is to compare days with the same session. So if a day of type $r1$ and a day of type $r2$ (same location and $r1 \neq r2$) have the opening hours 8.00-11.00, study if the arrival patterns of those days are the same. This is done for the locations with where the arrival patterns of days of the same type are the same. If for example the arrival patterns of day type $r1$ are the same, but the arrival patterns of day type $r2$ are not the same then this location is not considered. Again the two-sample Kolmogorov-Smirnov test is used. If the arrival patterns belonging to days of type $r1$ are compared to arrival patterns belonging to days of type $r2$, then all days of type $r1$ are compared to all days of type $r2$. If there are N days of type $r1$ and M days of type $r2$, then the results can be put in a $N \times M$ and a $M \times N$ matrix, say $H1$ and $H2$. For example at entry (n, m) of $H1$, with $1 \leq n \leq N$ and $1 \leq m \leq M$, there is the test result of day number n of type $r1$ compared day number m of type $r2$. Per day of type $r1$ the percentage of days of type $r2$ not the same as that one day of type $r1$ is calculated, this is done with equation 2a. Also per day of type $r2$ the percentage of days of type $r1$ not the same as that one day of type $r2$ is calculated, this is done with equation 2b. If a day of type $r1$ is similar to all days of type $r2$, then the percentage of days of type $r2$ not similar to that day of type $r1$ is small. The result can be put in a $(N) \times 1$ matrix, say $G1$. If a day of type $r2$ is similar to all days of type $r1$, then the percentage of days of type $r1$ not similar to that day of type $r2$ is small. The result can be put in a $(M) \times 1$ matrix, say $G2$. The smaller the percentages in $G1$ or $G2$, the more likely that the arrival patterns of days of type $r1$ and days of type $r2$ are similar for the location considered.

$$G1(i, 1) = \frac{\sum_{j=1}^M H1(i, j)}{M} \cdot 100\% \quad \forall i = 1, \dots, N \quad (2a)$$

$$G2(i, 1) = \frac{\sum_{j=1}^N H2(i, j)}{N} \cdot 100\% \quad \forall i = 1, \dots, M \quad (2b)$$

$$\frac{\sum_{i=1}^N \mathbb{1}(G1(i, 1) > 0.1)}{N} \cdot 100\% \quad (2c)$$

$$\frac{\sum_{i=1}^M \mathbb{1}(G2(i, 1) > 0.1)}{M} \cdot 100\% \quad (2d)$$

To decide if the arrival patterns of days of type $r1$ can be considered the same as the arrival patterns of days of type $r2$ with the same session, the percentage of rates bigger than 0.1 in matrix G1/G2 is calculated with (2c)/(2d). The arrival patters of days of type $r1$ are considered to be the same as the arrival patters of days of type $r2$, if both percentages, determined with (2c) and (2d), are smaller than 15%. For 90% of the fixed locations that are considered the arrival patterns of different type days, but the same session can be considered to be similar with this definition. This means that it is reasonable to conclude that different type days, but with the same session, have similar arrival patterns.

Last step is to analyse if days with different sessions have similar arrival patterns. The method is the same as for comparing days with the same session. Now days with different sessions are compared. For 84% of the fixed locations that are considered the arrival patterns of different type days and with different sessions can be considered to be not similar with this definition. Days of different type and with different sessions can have similar arrival patterns if the opening hours could not be defined correctly. For examples sometimes one donor can come outside opening hours, but this is not seen as outside opening hours. So this day gets assigned different opening hours than there have been in practice. Concluding it is reasonable to conclude that different type days and with different session, do not have similar arrival patterns.

Both analyses are done for all locations and all day types. In appendix B, the B, G1 and G2 matrices are shown for all blood donation locations. The matrices are ordered per location. The opening times of each location are shown in appendix C.

4.2 Service time distribution

The next step is to analyse the service time of donors. The blood donation process consists of three phases, as explained in section 3. For each of these phases a fitting distribution for the service time has to be found. These distribution are needed later in section 5 for the waiting time models and for the simulation models in section 7. To compare different probability distribution the program/script ALLFITDIST, found on the website of Mathworks, is used. With this program the following (continuous) probability distributions are fitted to the service time data: Beta, Birnbaum-Saunders, Exponential, Extreme value, Gamma, Generalized extreme value, Generalized Pareto, Inverse Gaussian, Logistic, Log-logistic, Lognormal, Nakagami, Normal, Rayleigh, Rician, t location-scale and Weibull. To find out which distribution fits the data best, the programs uses methods to rate the fitted distributions. The first two phases are for plasma and whole blood donors the same, they get the same service. So for phase one and two the data for plasma and whole blood donors are used. For phase three only the whole blood data are used. In table 1 the five best fitting distributions are shown.

Table 1: Ordering of best fitting probability distributions

	Phase 1	Phase 2	Phase 3
best fit	Generalised Extreme Value ($k = 0.0550$, $\sigma = 1.7127$ $\mu = 3.5957$)	Log-Logistic ($\mu = 1.5464$ $\sigma = 0.2810$)	Log-Logistic ($\mu = 2.7959$ $\sigma = 0.1785$)
	Log-Logistic ($\mu = 1.4394$ $\sigma = 0.2783$)	Generalised Extreme Value ($k = 0.1395$ $\sigma = 1.8731$ $\mu = 3.9824$)	Generalised Extreme Value ($k = -0.0046$ $\sigma = 4.7042$ $\mu = 14.6457$)
	Lognormal ($\mu = 1.4210$ $\sigma = 0.5039$)	Lognormal ($\mu = 1.5483$ $\sigma = 0.5085$)	t Location-Scale ($\mu = 16.4517$ $\sigma = 3.9290$ $\nu = 3.2982$)
	Gamma ($a = 4.2565$ $b = 1.0992$)	Inverse Gaussian ($\mu = 5.3704$ $\lambda = 17.8491$)	Lognormal ($\mu = 2.7927$ $\sigma = 0.3335$)
	Birnbaum ($\beta = 4.1109$, $\gamma = 0.5243$)	Birnbaum ($\beta = 4.7090$, $\gamma = 0.5302$)	Inverse Gaussian ($\mu = 17.2643$ $\lambda = 144.1700$)
less good fit	Exponential ($u = 4.6788$)	Exponential ($u = 5.3704$)	Exponential ($u = 17.2643$)

According to the results in table 1 the Generalised Extreme Value distribution and the Log-Logistic distribution are the best fit. To check how good those fits are, qq-plots of the phase 3 service times are shown in 2. The qq-plots of phase 1/2 service times show similar results.

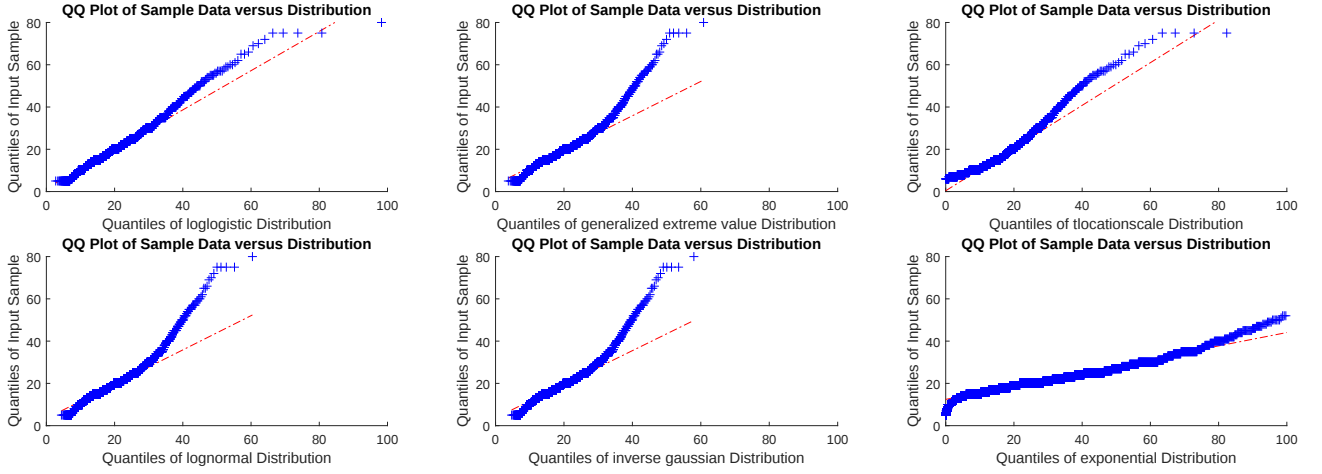


Figure 2: QQ-plots of fitted data phase 3 service times

In figure 2 all qq-plots show a good fit around the mean value of 17.2643 (standard deviation 6.1969). In section 5.1 and section 5.2 waiting time models are used with exponential service times. The qq-plot of the service time data and the fitted exponential distribution shows that an exponential service time can be assumed.

Also the p-values are calculated to check how good the distributions can be fit to the data. To calculate p-values the Chi-square goodness-of-fit test is used. For all three phases and all distributions that are fitted, the p-values are smaller than the significance level of 5%. This means that the null hypothesis, service time data comes from distribution considered, is rejected. A possible reason for rejecting the null hypothesis is that the fitted distributions do not fit the data good for high waiting time values.

Conclusion, none of the considered probability distributions fits the service time data good. The exponential distribution is among the "best" fitting distributions.

5 Waiting time models

Since blood donors come voluntarily it is important to keep donors satisfied. For blood donors it is important that the waiting time is low as possible. Therefore, to take this waiting time into account, two waiting time models are treated in this section. These waiting time models give an indication for the possible waiting time. The models are used later on to decide which time slots to open for whole blood donors to make an appointment and which to close.

The donation process consists of three sequential phases. The donor has to complete phase one before phase two can be started and phase two has to be completed before phase three can be started. This means the donation process is a tandem queue consisting of three service points, with the exception that donors can leave the system before all phases have been completed. At each service point there are one or more staff members to give service. A donor can finish service without interruption, so the donation system is non-preemptive. One staff member is needed to serve one donor. Currently, there are two types of donors, plasma and whole blood donors. Plasma donors have absolute priority over whole blood donors, so a plasma donor has no waiting time, unless all staff members (of that phase) are busy. The whole blood donors with appointment will have (absolute) priority over whole blood donors without appointment. Therefore a plasma donor is in priority class one, a whole blood donor with appointment in class two and a whole blood donor without appointment in class three.

5.1 Network of non-preemptive M/M/c queues with priorities

To be able to measure waiting time, the first model to consider is the model of (27). In this article the Laplace-Stieltjes transform of the waiting time W_k of a class- k customer in the non-preemptive priority M/M/c queue is derived. All customers have the same mean service time. With this model the waiting time distribution of each phase of the donation process can be determined. To use the model of (Yechiali1985) the assumption has to be made that donors arrive according to a Poisson Process with rate λ_i , where i is the customer class. Another assumption is that the service time of donors follows an exponential distribution, with rate μ . A donor is served by one of the c employees. The parameters in (3) are used for the model.

$$\lambda_a = \sum_{i < k} \lambda_i, \quad \lambda = \sum_{i=1}^n \lambda_i, \quad \rho_i = \lambda_i(c\mu)^{-1}, \quad \rho_a = \lambda_a(c\mu)^{-1}, \quad \sigma_j = \sum_{i=1}^j \rho_i, \quad \rho = \lambda(c\mu)^{-1} \quad (3)$$

The Laplace-Stieltjes transform of the waiting distribution of a class- k donor derived in (27) is given by 4.

$$\tilde{W}_k(s) = (1 - \pi) + \pi \cdot \left(\frac{c\mu(1 - \sigma_k)(1 - \tilde{\gamma}(s))}{s - \lambda_k + \lambda_k \tilde{\gamma}(s)} \right) \quad (4)$$

$$\pi = \frac{(\lambda/\mu)^c}{c!(1 - \rho)} \left[\sum_{i=0}^{c-1} \frac{(\lambda/\mu)^i}{i!} + \frac{(\lambda/\mu)^c}{c!(1 - \rho)} \right]^{-1} \quad (5)$$

$$\tilde{\gamma}(s) = \frac{s + \lambda_a + c\mu - [(s + \lambda_a + c\mu)^2 - 4\lambda_a c\mu]^{1/2}}{2\lambda_a} \quad (6)$$

In (4) π is the probability that a donor has to wait.

The waiting time formula in 4 can be used for one phase of the donation process. For a donor it is important that the total waiting time is low and not the waiting time of just one phase. If the density distribution of the waiting time at each phase is known and the phases are considered independent, the density distribution of the total waiting can be calculated by taking the convolution of the three density distributions. Alternatively, it is also possible to multiply the Laplace-Stieltjes transform of the waiting time of the three phases. For the blood donation process the assumption is made that the three phases are independent. The phases of the blood donation process are not independent. The assumption of independent phases is discussed in (18). In section 7.1 a simulation model will be defined to verify how good/bad this assumption is. The verification is done for a test case in section 8.2. The Laplace-Stieltjes transform of the total waiting time distribution is then defined by (7).

$$\tilde{W}_k(s) = \frac{\tilde{W}_{1,k}(s)\tilde{W}_{2,k}(s)\tilde{W}_{3,k}(s)}{s} \quad (7)$$

In equation 7 $\tilde{W}_{i,k}(s)$ is the Laplace-Stieltjes transform of the waiting time density distribution for a class k donor in phase i . Then $\tilde{W}_{1,k}(s)\tilde{W}_{2,k}(s)\tilde{W}_{3,k}(s)$ is the Laplace-Stieltjes transform of the density distribution of the total waiting time of a class k donor. The probability distribution can be calculated by integrating the density function, which is identical to dividing the Laplace-Stieltjes transform of the density distribution with s .

To measure the total waiting time for each donor class, the probability distribution of the total waiting time of each donor class has to be calculated. This can be done by taking the inverse transform of the Laplace-Stieltjes transform. The inverse transform can not be derived analytically. Therefore this has to be done numerically. For the numeric inverse transform the Euler method of (31) is used. A disadvantage of calculating the inverse transform numerically is the computation time. The numeric inverse transform process is so slow, that this method can not be used for determining the a good appointment schedule. To many appointment schedule have to be evaluated. If only one appointment schedule has to be evaluated, then this waiting time model can be used. To determine a good appointment schedule a different waiting time model derived, this will be discussed in section 5.2.

5.2 Network of M/M/1 queues with capacity reservation

The waiting time model of section 5.1 can not be used for determining a good appointment schedule. Therefore a second waiting time model is will be used for the determination of appointment schedules. The model to determine a good appointment schedule will be discussed in section 6 and 6.3.

Similar to the model in section 5.1, donors arrive according to a Poisson process with rate $\lambda_{p,k}$ for phase p and donor class k . The donors of class k experience a service time which follows a exponential distribution with rate $\bar{\mu}_{p,k}$ at phase p . In phase one and two plasma donors and whole blood donors use the same resources and the need same service, so the service rate is the same for both. In phase three plasma donors and whole blood donors are separated, this means plasma donors do no have to be taken into account to calculate the waiting time for whole blood donors in phase three of the donation process. So $\bar{\mu}_3$ is the service rate for whole blood donors. For each phase each donor class is represented by a M/M/1 queue. In (8) the arrival rates of class k donors are defined for each phase of the donation process. The probability that a donor does pass the medical check (phase 2) is ρ , so $\rho\lambda_{2,k}$ is the arrival rate for phase three.

$$\lambda_{2,k} = \lambda_{1,k}, \quad \lambda_{3,k} = \rho\lambda_{2,k} \quad (8)$$

Since at each phase of the donation process there are often more than one staff member the service rate has to be adapted. Further the different priority classes have to be kept. Therefore the service rate of each donor class at each phase of the donation process will be the total service capacity available. For each donor class the total available capacity will be different, since the priority classes have to be taken into account. Since plasma donors have the highest priority, they can use all capacity available, (9). The whole blood donors with appointment have less priority. If all plasma donors are served then the remaining capacity is for the whole blood donors with appointment, (10). The whole blood donors without appointment get the remaining capacity, not needed for plasma donors and whole blood donors with appointment, (11).

$$\bar{\mu}_{p,1} = C_p\mu_p \quad (9)$$

$$\bar{\mu}_{p,2} = C_p\mu_p - \lambda_{p,1} \quad (10)$$

$$\bar{\mu}_{p,3} = C_p\mu_p - \lambda_{p,1} - \lambda_{p,2} \quad (11)$$

For a M/M/1 queue the waiting time density function is known (12). The density function of (12) corresponds to the waiting time probability distribution $P(W_{p,k} > t | W_{p,k} > 0) = e^{-\bar{\mu}_{p,k}(1-\rho_{p,k})t}$.

$$\begin{aligned} f_{W_{p,k}} &= \bar{\mu}_{p,k}(1 - \rho_{p,k})e^{-\bar{\mu}_{p,k}(1-\rho_{p,k})t} \\ \rho_{p,k} &= \frac{\lambda_{p,k}}{\bar{\mu}_{p,k}} \end{aligned} \quad (12)$$

Like in section 5.1 the assumption is made that the phases are independent. The phases of the blood donation process are not independent. The assumption of independent phases is discussed in (18). In section 7.1 a simulation model will be defined to verify how good/bad this assumption is. The verification is done for a test case in section 8.2. This means that the density function of the total waiting time can be calculated by taking the convolution of $f_{W_{1,k}}$, $f_{W_{2,k}}$ and $f_{W_{3,k}}$. The three density functions are simple enough to allow for analytical computation of the convolutions. When the density function is calculated, the distribution can be calculated analytically as well. These calculations can be done with the functions as in (12), such that the computations only have to be done one time. To calculate a probability, the parameters and variables can be filled in. This makes calculating a probability a fast procedure.

6 Schedule model

It has to be decided which time slots will be open for whole blood donors to make an appointment. For each week the same slots will be open/closed for donors. For each slot it can be chosen if the slot is open or closed. Also it can be chosen how many appointments there can be made if a slot is open. The time slots open for making an appointment for whole blood donation form a schedule. A schedule is one possibility of which slots are open/closed and for how many appointments. Given that walk in donors show clear preferences for some times, we have to carefully select the times at which an appointment can be made. To determine a good schedule, first a schedule has to be generated. This is explained in section 6.1. It is necessary to know how good certain schedules are. Therefore, it has to be rated. In section 6.2 it is explained how schedules are given a rate.

6.1 Heuristic to generate schedules

To start the process of looking for good schedule, we will first generate an initial schedule, and will then improve this initial solution. To this end, the total available capacity per time slot, per day is calculated. This is done by calculating the maximum number of donors that can be serviced per phase (of the donation process) per time slot, per day.

$$\bar{C}_{f,i,d} = C_{f,i,d} \cdot \mu_f, \quad \forall i = 1, \dots, 72; \forall d = 1, \dots, 5 \quad (13)$$

In (13) $C_{f,i,d}$ is the total number of available staff members in phase f , at time slot i of day d . The service rate of staff members of phase f is μ_f per 10 minutes. As there are 5 working days, maximal 72 time slots per day and the donation process consists of 3 phases, $d = 1 \dots 5$, $i = 1 \dots 72$ and $f = 1, 2, 3$. If a location is not open at time slot (i,d) then $C_{f,i,d} = 0$, $\forall f = 1, 2, 3$.

As mentioned in section 6.2, it has to be determined which time slots should be opened for whole blood donors to make an appointments, and how many appointments should be allowed per time slot. To get the average arrival rates, data of the arrivals in 2015 will be used. The average arrival rates will be computed for every donor type. In the future Sanquin strives for a situation in which 80% of the whole blood donor should come with an appointment. To reach this, we will start by summing up the arrival rates of the whole week. Then 80% of the total arrivals per week is taken en round up to whole number. Equation (14) shows the arrival rates that will be used for the three types of donors considered in this study.

$$\lambda^{app} = \lceil 0.8 \cdot \left(\sum_{d=1}^5 \sum_{i=1}^{72} \lambda_{i,d} \right) \rceil; \quad \lambda_{i,d}^{walkin} = 0.2 * \lambda_{i,d}; \quad \lambda_{i,d}^{plasma} \quad (14)$$

In (14) $\lambda_{i,d}$ is the averaged arrival rate of whole blood donors (100% walk in) per 10 minutes, as acquired from the data of 2015. With the arrival rates an available capacity determined, now the initial schedule can be calculated. This is done with algorithm 1.

```

Data:  $\lambda^{app}, \lambda_{i,d}^{walkin}, \lambda_{i,d}^{plasma}, \bar{C}_{i,d}, \rho$ (probability of passing medical check)
Result: Initial schedule S
1 s=0;
2 K is 72x5 matrix with all entries zero;
3 %while not all appointments planned
4 while s ≤  $\lambda^{app}$  do
5     % For all days
6     for d=1:5 do
7         % For all time slots
8         for i=1:72 do
9             % Remaining capacity phase 1
10             $V1(i, d) = \bar{C}_{1,i,d} - K(i, d) - \lambda_{i,d}^{plasma} - \lambda_{i,d}^{walkin}$ ;
11            % Remaining capacity phase 2
12             $V2(i, d) = \bar{C}_{2,i,d} - K(i, d) - \lambda_{i,d}^{plasma} - \lambda_{i,d}^{walkin}$ ;
13            % Remaining capacity phase 3, plasma donation separate from whole blood donation, so not considered
14             $V3(i, d) = \bar{C}_{3,i,d} - \rho \cdot (K(i, d) + \lambda_{i,d}^{walkin})$ ;
15            % Determine which phase is the bottleneck
16             $V(i, d) = \min(V1(i, d), V2(i, d), V3(i, d))$ ;
17        end
18    end
19    % Choose the time slot with the most available capacity
20     $(i^*, d^*) = \max_{i,d} V$ ;
21    % An appointment will be planned in the time slot with the most available capacity
22     $K(i^*, d^*) = K(i^*, d^*) + 1$ ;
23    % One appointment is planned
24    s = s + 1;
25 end
26 % initial schedule S = K;

```

Algorithm 1: Generate initial schedule

To generate an initial schedule, algorithm 1 starts with an empty schedule K. Then for each time slot it calculates the remaining capacity per phase if this schedule K is used, for phase one (V1), phase two (V2) and phase three (V3). As the smallest remaining capacity, restricts the capacity of the system, the minimum of V1, V2 and V3 will be used to find the best place to add an appointment. This minimum will be stored in V. Then the time slot with the largest positive value for V will be selected, and an appointment will be added to this time slot. This way, appointments are placed in time slots with a large excess capacity, which should result in a schedule with low waiting times. Now one appointment is placed, the procedure in algorithm 1 repeats until all appointments are placed in the schedule.

Although the schedule that results from algorithm 1 is probably not a bad one, it will be tried to improve this schedule. This is done with the procedure in algorithm 2.

```

Data:  $S, \bar{C}_{1,i,d}, \lambda^{app}, \lambda_{i,d}^{walkin}, \lambda_{i,d}^{plasma}, \rho, target$ 
Result: Schedule K, u
1 % start with initial schedule
2 K=S;
3 % vectors which contain pair of indices. k1;
4 k2;
5 % For all days
6 for d=1:5 do
7     % For all time slots
8     for i=1:72 do
9          $V1(i,d) = \bar{C}_{1,i,d} - \lambda_{i,d}^{plasma} - \lambda_{i,d}^{walkin}$ ; % Determine the capacity available for whole blood donors with appointment for phase 1
10         $V2(i,d) = \bar{C}_{2,i,d} - \lambda_{i,d}^{plasma} - \lambda_{i,d}^{walkin}$ ; % Determine the capacity available for whole blood donors with appointment for phase 2
11         $V3(i,d) = \frac{\bar{C}_{3,i,d} - \rho \cdot \lambda_{i,d}^{walkin}}{\rho}$ ; % Determine the capacity available for whole blood donors with appointment for phase 3
12         $V(i,d) = \lfloor \min(V1(i,d), V2(i,d), V3(i,d)) \rfloor$ ; % Determine which phase is the bottleneck
13    end
14 end
15 % Determine how many appointments can maximally be scheduled, without having not enough service capacity
16  $B = \sum_{i,d} \mathbb{1}(V(i,d) \geq 0) \cdot V(i,d)$ ;
17 % If more appointments can be scheduled than necessary
18 if  $B > \lambda^{app}$  then
19     u = 1;
20     Find the indices i, d such that  $V(i,d) \geq 1$ , put them in matrix C;
21     M=max(V); % Maximal number of appointments that can be planned in one time slot
22     if M > 1 then
23         a = 2 % If the maximal number of appointments that can be planned in one time slot is more than 1
24     end
25     if M ≤ 1 then
26         a = 1 % If the maximal number of appointments that can be planned in one time slot is less or equal as 1
27     end
28     % matrix with consists of indices of time slots where one extra appointment can be planned
29     Define matrix D1, consisting of indices from C for which  $S < a$ ;
30     % matrix with consists of indices of time slots where one appointment will be removed
31     Define matrix D2, consisting of indices from C for which  $S \geq a$ ;
32     while k1 == k2 do
33         %choose time slot where one appointment will be add
34         k1 is pair of indices randomly chosen from D1;
35         %choose time slot where one appointment will be removed
36         k2 is pair of indices randomly chosen from D2;
37     end
38     Remove one appointment from time slot indices from k2;
39     Add one appointment to time slot indices from k1;
40 end
41 % If as much appointments can be scheduled as necessary
42 if  $B == \lambda^{app}$  then
43     Keep the initial schedule S;
44     u = 2;
45 end
46 % If less appointments can be scheduled as necessary
47 if  $B < \lambda^{app}$  then
48     A=V;
49     % For all days
50     for d=1:5 do
51         % For all time slots
52         for i=1:72 do
53              $V1(i,d) = \bar{C}_{1,i,d} - \lambda_{i,d}^{plasma}$ ; % Determine the capacity available for whole blood donors for phase 1
54              $V2(i,d) = \bar{C}_{2,i,d} - \lambda_{i,d}^{plasma}$ ; % Determine the capacity available for whole blood donors for phase 2
55              $V3(i,d) = \frac{\bar{C}_{3,i,d}}{\rho}$ ; % Determine the capacity available for whole blood donors for phase 3
56              $V(i,d) = \lfloor \min(V1(i,d), V2(i,d), V3(i,d)) \rfloor$ ; % Determine which phase is the bottleneck
57         end
58     end
59     % Determine how much capacity there is for whole blood donors
60      $B = \sum_{i,d} \mathbb{1}(V(i,d) \geq 0) \cdot V(i,d)$ ;
61     % If there is enough capacity for whole blood donors
62     if  $B \geq target$  then
63         u = 3;
64         K=B;
65         only whole blood donors with appointment;
66     end
67     % If there is not enough capacity for whole blood donors
68     if  $B < target$  then
69         u = 4;
70         Find the indices i, d such that  $A(i,d) \geq 0$ , put them in matrix C;
71         if  $\lambda^{app} - B \geq 1$  then
72             M=max(V);
73             if M > 1 then
74                 a = 2
75             end
76             if M ≤ 1 then
77                 a = 1
78             end
79             Define matrix D1, consisting of indices from C for which  $S < a$ ;
80             Define matrix D2, consisting of indices from C for which  $S \geq a$ ;
81             while k1 == k2 do
82                 k1 is pair of indices randomly chosen from D1;
83                 k2 is pair of indices randomly chosen from D2;
84             end
85             Remove one appointment from time slot indices from k2;
86             Add one appointment to time slot indices from k1;
87         end
88     end
89 end

```

Algorithm 2: Generate schedule

Algorithm 2 starts in step 1 by choosing the initial schedule S as schedule. In line 4-12 the maximum number of appointments that can be put in schedule K is calculated, given that the arrival rate has to be smaller than the service capacity.

If there are more appointment possibilities than there are appointments needed, line 13-30, then it is best to look at the time slots where there is enough capacity for all arriving plasma and whole blood donors without appointment and at least one walk in donor with appointment. If there is enough capacity, waiting time will be lower than if an appointment is planned in a time slot without enough capacity for all three donor types. Especially whole blood donors without appointment will get a high waiting time if there is not enough capacity for all arriving donors. In this case, an appointment will be moved from a time slot with a lot of appointments, line 28, to a time slot with zero or one appointments, line 29.

If there are just as much appointment possibilities as there are appointments needed then the initial schedule S is also the best schedule, step 31-33. In this case, appointments could only be moved to time slots where there is not enough capacity for plasma donors, whole blood donors without capacity and one or more whole blood donors with appointment. This will result in worse waiting time for whole blood donors with appointment, whole blood donors without appointment or both donor types.

if there are less appointment possibilities than there are appointments needed, lines 34-67 will be used. In this situation a combination of 80% whole blood donors with appointment and 20% whole blood donors without appointment is not possible, without creating some time slots that do not have enough capacity for all three donor types. Therefore an alternative is checked with 100% whole blood donors with appointment. In lines 36-44 it is calculated if this is possible. At least the target number of whole blood donations per week has to be reached, this is checked in lines 45-48. In step 36-44 the maximum number of appointments is calculated that can be put in schedule K if the arrival rate would be kept lower than the service capacity for each time slot consisting of plasma and whole blood donors. If this target can not be reached, lines 49-67 compute the least bad schedule. Therefore C is defined as in step 50. The same method is used in step 52-66 as in step 15-29.

6.2 Rating schedules

As explained in section 1.1, it has to be determined which time slots should be opened for appointments of whole blood donors. For donors it is very important that the total waiting time is low. With the two waiting time models from section 5, the probability of waiting longer than t minutes can be determined for each donor type k per time slot. Each working day is divided in slots of 10 minutes and a location might be open between 8.00 and 20.00. For each of the slots for each of the days of the week, the waiting time probabilities are determined. This results in a 72×5 matrix R_k (for donor type k), with the columns representing the five working days (Monday-Friday) and the rows representing the timeslots. This is visualised in figure 3.

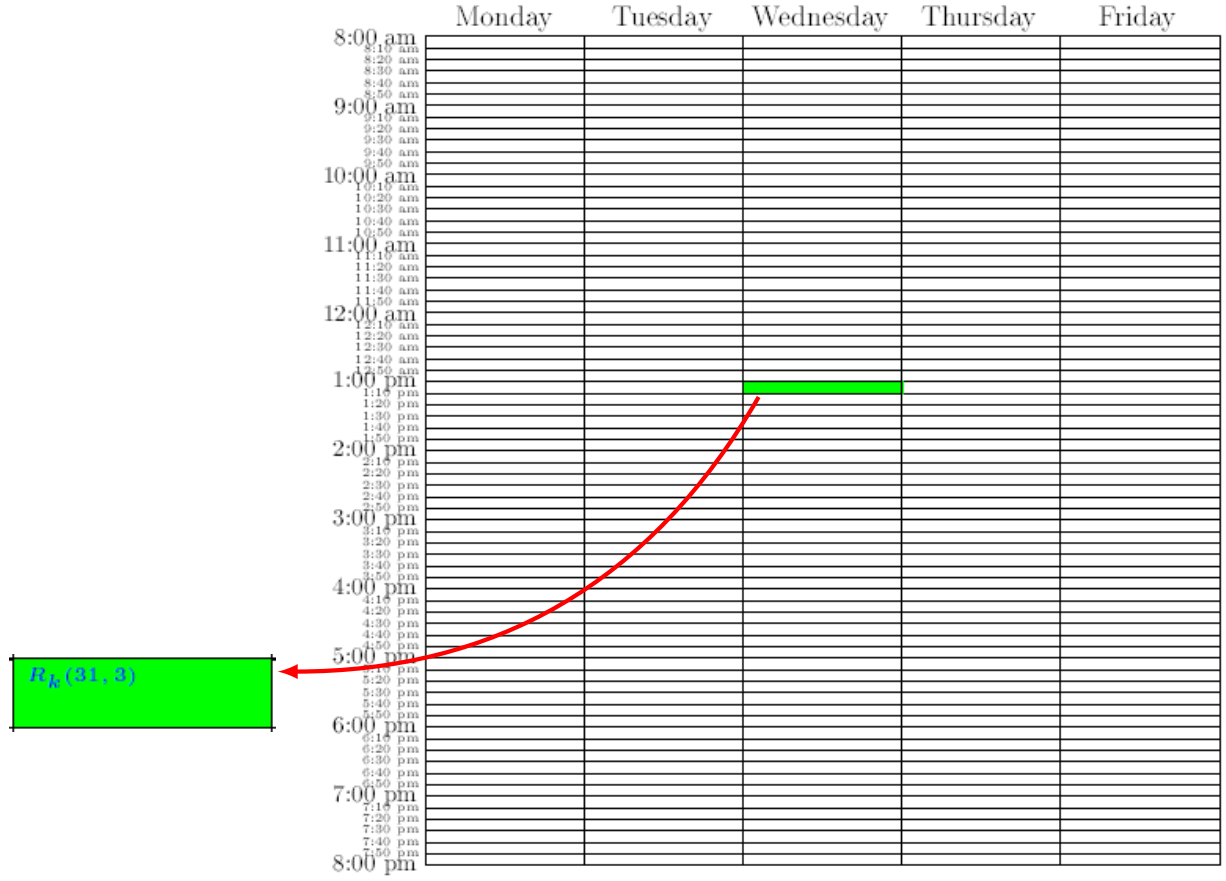


Figure 3: Matrix to save the results one of the waiting time models

In figure 3 the results of one of the waiting time models of section 5 are saved in a matrix. As in figure 3, zoom in to a time slot. In this case, we will use Wednesday from 13.00 till 13.10 as an example. If the location is not open at that time slot no waiting probability has to be calculated. If the location is opened, the waiting model in section 5.1 has the restriction that the total arrival rate of all three donor types must be smaller than the service rate at each phase of the donation process. The queuing model in section 5.2 has the restriction that the arrival rate of a type k donor must be smaller than the service rate of a type k donor at each phase of the donation process. Both restrictions are used to make sure there is enough capacity to service all the arriving donors. If these restrictions are met then $R_k(31, 3)$ has the value $P(W_k > t)$ or $P(W_k > t | W_k > 0)$, respectively for the models of section 5.1 and 5.2. If the restrictions are not met then $R_k(31, 3)$ is given the value 1.

To decide which schedule is best, it is necessary to grade a schedule. This is done with an cost function. For whole blood donation with appointment the cost function 15 is used, for whole donation without appointment the cost function 16.

$$\underbrace{\sum_{d=1}^5 \sum_{i=1}^{72} \mathbb{1}(\text{center is open at time slot } (i, d)) \cdot [R_2(i, d) + \text{Penalty}(R_2(i, d))]}_a \quad (15)$$

$$\underbrace{\sum_{d=1}^5 \sum_{i=1}^{72} \mathbb{1}(\text{center is open at time slot } (i, d)) \cdot [R_3(i, d) + \text{Penalty}(R_3(i, d))]}_a \quad (16)$$

As mentioned, whole blood donors with appointment are assigned type 2 and whole blood donors without appointment are assigned type 3. To rate a schedule the probabilities are summed up. This corresponds to part a of

equation (15) and (16). If there is not enough capacity to service the arriving donors, $R_k(i, d) = 1$ ($k = 2, 3$). A schedule with one time slot $R_k(i, d) = 1$ and one time slot $R_k(i, d)$ low is worse than a schedule with two time slots $R_k(i, d)$ average. To keep donors satisfied it is better that donors experience the same waiting time. As part a of equation (15)/(16) is unable to distinguish between these two variants, a penalty is introduced. This corresponds to the remaining part of the equation. Therefore a penalty is needed, other part of 15/16. Since whole blood donors with appointment have priority over whole blood donors without appointment, the penalty for not having enough capacity is higher for whole blood donors with appointment than for whole blood donors without appointment.

The appointments of plasma donors are made independently of the arrivals/appointments of whole blood donors. This means that only the schedule for whole blood appointments can be used to reduce waiting time. Only the time slots with low expected arrivals of plasma donors and walk in whole blood donors, will be opened for whole blood appointments. This reduces the waiting time for both whole blood donors and plasma donors. A minimum number of slots have to be opened and filled with appointments, otherwise the target, total number of donations per week, is not reached. Plasma donors have higher priority than whole blood donors. The planning of plasma donors can not be influenced, it is a given. An cost function for plasma donors is therefore not necessary.

6.3 Heuristic to determine schedule

In section 6 it is explained how (week) schedules of appointments for whole blood donation are generated and rated. Several schedules have to be generated, such that the best schedule can be chosen. To choose the best schedule a rating is necessary. In this section a heuristic is given to determine a good enough schedule. Alternately schedules are generated and rated, and checked if the newly generated schedule is better as the best schedule so far.

The procedure in algorithm 3 is used to find the best possible schedule.

Data: $C_{f,i,d}, \mu_f, \lambda_{i,d}, \lambda_{i,d}^{plasma}, \rho, target, I$ Result: Schedule SS <pre> 1 Determine initial schedule S with algorithm 1; 2 SS=S; 3 Calculate W1, this is the waiting probability matrix R_1 if the matrix SS is used; 4 Calculate W2, this is the waiting probability matrix R_2 if the matrix SS is used; 5 Rate schedule SS with equations 15 and 16; 6 for $i=1:I$ do 7 Generate a schedule K and value of u with algorithm 2; 8 if $u == 2$ or $u == 3$ then 9 stop for loop, best schedule has been found 10 end 11 if $u \neq 2$ and $u \neq 3$ then 12 Calculate W1new, this is the waiting probability matrix R_1 if the matrix K is used; 13 Calculate W2new, this is the waiting probability matrix R_2 if the matrix K is used; 14 Rate schedule K with equations 15 and 16; 15 if Rates of schedule K lower than rates of schedule SS then 16 SS=K; 17 W1=W1new; 18 W2=W2new; 19 end 20 end 21 end </pre>

Algorithm 3: Procedure to find good enough schedule

First an initial schedule S is calculated for the whole blood appointments, line 1 in algorithm 3. This initial schedule is determined with algorithm 1. For schedule S the waiting time probability matrices, R_1 and R_2 are calculated, line 3-4. Section 6.2 describes how these matrices are determined. Depending on the available capacity in a time slot an entry of the matrices R_1 and R_2 has the value one or, depending on the model, $P(W_k > t)/P(W_k > t|W_k > 0)$. The matrices R_1 and R_2 are then rated with equations 15 and 16, in line 5. I determines the number of times the heuristic will be applied. For a higher I , a better schedule will be found, but computational time will also increase. Algorithm 2 will then be used to generate an alternative schedule K based on the current schedule S, see line 7. Algorithm 2 also returns a value for the variable u . If this value is two or three than the best schedule has been found, the for loop is stopped (step 8-10). If the variable $u == 2$ than the initial schedule is considered the best possible schedule. Whole blood donors only come with appointment if variable $u == 3$. The schedule belonging to 100% whole blood donors with appointment is considered the best. If the variable u has the value one or two than the waiting time probability matrices R_1 and R_2 are calculated with schedule K and the matrices are rated (line 13-14). The matrices are rated, step 14. A lower rating means less waiting time, so if the ratings for schedule K

are lower than those of schedule SS, then schedule K is accepted. If this is the case schedule K and the matrices R_1 and R_2 belonging to schedule K are saved, step 16-18. So the procedure in algorithm 3 is a repetition of generating a schedule, rating this schedule and checking is the schedule is better than the best one calculated previously. It is not guaranteed that a global optimum will be found, more likely is that the calculated schedule is a local optimum.

7 Simulation models

In this section two simulation models are introduced. The first model is used to see how good/bad the assumption is (see section 5) that the waiting time at the phases of the donation process are independent. The second simulation model will give an indication of how the calculated appointment schedules (see section 6.3) will work out in practice. Both models are made with Simulink (MATLAB R2016b).

7.1 First simulation model

With the waiting time models in section 5, the probability of waiting longer than t minutes can be computed for each donor class and time slot. For each time slot, the waiting time probabilities are determined independent of the other time slots of that day, and therefore do not take arrivals in other time slots into account. This property is also put into the simulation model. For each time slot the corresponding waiting time probabilities are calculated with the simulation model.

From section 6 the arrival rates, service rates and the number of staff members per phase are known. With the heuristic in section 6.3 an appointment schedule can be computed. So the arrival rate of whole blood walk-in donors for slot i on day d is $\lambda_{i,d}^{walkin}$ and the arrival rate of plasma donors for slot i on day d is $\lambda_{i,d}^{plasma}$. The elements of the schedule $SS_{i,d}$ give the number of scheduled whole blood donors that will arrive at the beginning of time slot i of day d . The service rate of one staff member at phase f is defined by μ_f and the number of staff members working at phase f at time slot i of day d is given by $C_{f,i,d}$.

Just as for the waiting time models in section 5 the simulation model consist of the three donation phases. For each phase the service time follows an exponential distribution with rate μ_f . Also the number of staff members, $C_{f,i,d}$, is the same. The plasma and whole blood walk-in donors each arrive according to a Poisson Process with the rates $\lambda_{i,d}^{plasma}$ and $\lambda_{i,d}^{walkin}$ respectively.

For the simulation each day is divided in 72 time slots, the same number used in section 6. These time slots get the index i^* . To calculate the waiting time probabilities of one time slot (section 5), a whole day at a donation location is simulated with the rates of (17).

$$\begin{aligned}\bar{\lambda}_{i^*}^{walkin} &= \lambda_{i,d}^{walkin}, & \forall i^* &= 1, \dots, 72 \\ \bar{\lambda}_{i^*}^{plasma} &= \lambda_{i,d}^{plasma}, & \forall i^* &= 1, \dots, 72 \\ \bar{S}_{i^*} &= SS_{i,d}, & \forall i^* &= 1, \dots, 72 \\ \bar{C}_{f,i^*} &= C_{f,i,d}, & \forall i^* &= 1, \dots, 72; \forall f = 1, 2, 3\end{aligned}\tag{17}$$

If the waiting time probabilities belonging to time slot i on day d have to be simulated than $\bar{\lambda}_{i^*}^{walkin}$ is the arrival rate (of Poisson process) of whole blood walk-in donors for time slot i^* of the simulation model. Further $\bar{\lambda}_{i^*}^{plasma}$ is the arrival rate (of Poisson process) of plasma donors for time slot i^* of the simulation model and $\bar{S}_{i^*}$ is the number whole blood donors with appointment, coming at the begin of time slot i^* of the simulation model. These arrival rates are valid if the location considered is open at time slot i^* , if closed there are no arrivals. This simulation model is in correspondence with the way waiting time probabilities are calculated for time slot i on day d with the waiting time models in section 5. The difference is that the phases of the blood donation process are dependent for the simulation model. Also in the simulation model the priorities of donors are as in practice. To calculate the waiting time probabilities belonging to time slot i of day d the simulation has to be run multiple times. The method of Monte Carlo simulation is applied.

Each donor entering the blood donation location of the simulation will be assigned attributes. Those attributes are: class, value to indicate if donor will pass medical test (Bernoulli distribution), arrival time, service time phase one, service time phase 2, service time phase 3, sojourn time and total waiting time. The output of the simulation model are the attribute values of all (whole blood) donors that have gone through all phases of the donation process. The attribute values are in order of the arrival times of the donors. Algorithm 4 gives the procedure to calculate the probability of waiting longer than t minutes per donor class (whole blood donor with/without appointment).

```

Data:  $\bar{C}_{f,i*}, \mu_f, \bar{\lambda}_{i*}^{walkin}, \bar{\lambda}_{i*}^{plasma}, \bar{S}_{i*}, I$ 
Result: chance1, chance2
1 K1=zeros(1,2);
2 K2=zeros(1,2);
3 for  $i=1:I$  do
4   Run simulation model with arrival rates  $\bar{\lambda}_{i*}^{walkin}, \bar{\lambda}_{i*}^{plasma}, \bar{S}_{i*}$ , service rates  $\mu_f$  and number of staff members  $\bar{C}_{f,i*}$ ;
5   Determine T1, that are the arrival times of all whole blood donors with appointment that have passed all phases;
6   Determine wait1, that are the waiting times of all whole blood donors with appointment that have passed all phases;
7   Determine T2, that are the arrival times of all whole blood donors without appointment that have passed all phases;
8   Determine wait2, that are the waiting times of all whole blood donors without appointment that have passed all phases;
9   Determine index1a, this is the number of whole blood donors with appointment that have passed all phases and had to wait longer than t
   minutes in this run of the simulation model;
10  Determine index1b, this is the number of whole blood donors with appointment that have passed all phases in this run of the simulation model;
11   $chances1 = index1a/index1b$ ;
12  Determine index2a, this is the number of times that whole blood donors without appointment have to wait longer than t minutes in this run of
   the simulation model;
13  Determine index2b, this is the number of whole blood donors without appointment that have passed all phases in this run of the simulation
   model;
14   $chances2 = index2a/index2b$ ;
15  if  $index1b > 0$  then
16     $K1 = K1 + [index1a * chances1, index1a]$ ;
17  end
18  if  $index2b > 0$  then
19     $K2 = K2 + [index2a * chances2, index2a]$ ;
20  end
21 end
22 chance1=K1(1,1)/K1(1,2);
23 chance2=K2(1,1)/K2(1,2);

```

Algorithm 4: Procedure to find waiting time probabilities via simulation

Before running algorithm 4, it has to be decided for which time slot of a certain day the waiting time probabilities have to be calculated via simulation. Then the input (17) is fixed. As Monte Carlo simulation is applied, the simulation is done I times, line 3-21 of algorithm 4. How to determine the value of I is explained in section 7.3. If a simulation is done (line 4) then the arrival times and waiting times are known. The arrival times are assigned to T1 and T2, line 5/7. The waiting times are assigned to wait1 and wait2, line 6/8. Only donors arriving during opening hours are taken into account. In step 11 and step 14 the probability of passing all phases and waiting longer than t minutes is determined. This probability is only valid for the arrival pattern of the just done run of the simulation model. If the simulation model is run again different probabilities are used, the random number generators get a new seed. Since the number of donors passing all phases is different each time the simulation model is run, also $index1a/index2a$ changes. The number of whole blood donors with/without appointment that have passed all phases of the donation process and have to wait longer than t minutes is assigned to $index1a$, $index2a$ respectively. The value $index1a/index2a$ gives an indication of the statistical quality of the calculated probability $chances1/chances2$. Therefore the probability $chances1/chances2$ has to be weighted with $index1a/index2a$, $index1a * chances1/index2a * chances2$ is calculated. All weighted probabilities and weights are summed, step 16 and 19. The weighted average is the probability that was the aim of the algorithm, step 22-23.

7.2 Second simulation model

To get a simulation model that better represents reality, the different stages of the donation process have to be divided in smaller service steps. This means the registration and filling in of the medical form in phase one are separated. Phase two is unchanged. In phase three connecting the blood donation machine to the donor, the donation and uncoupling the machine is separated. There are six phases instead of three. By separating the steps of phase three of simulation model one, it is necessary to separately keep track of the number of staff members and beds available. When a staff has coupled a donor to the donation machine than the staff member is available again but the bed is not. The bed is in use until the donor is uncoupled. Also in phase one there is service by a staff member, but not in phase two. In phase a donor has to fill in the questionnaire, so there is service time, but no staff member is needed. To have more realistic service times, the lognormal distribution is chosen. The number of staff members at phase one of the simulation model is the same as for phase one of the first simulation model. The number of staff members at phase three of the simulation model is the same as for phase two of the first simulation model. Further the number of staff members at phase four and six of the simulation models combined is the same as for phase three of the first simulation model.

The remainder of the input to the simulation model is the same as for the first simulation model, the appointment schedule $SS_{i,d}$, plasma arrival rates $\lambda_{i,d}^{plasma}$, whole blood walk-in arrival rates $\lambda_{i,d}^{walkin}$ and number of staff members $C_{f,i,d}$. For the service time distribution two parameters, the mean service time μ_f and standard deviation σ_f for phase f are needed, because of the lognormal distribution. The plasma donors and whole blood donors without appointment arrive according to two Poisson processes. For the arriving plasma donors also a Poisson process is chosen to keep the same line with the waiting time models of section 5. A Poisson process also models the

unpunctuality of plasma donors. If a simulation is run for day d^* , then the first inter-arrival time of a plasma/whole blood walk-in donor is according to the exponential distribution with arrival rate $\lambda_{1,d^*}^{plasma} / \lambda_{1,d^*}^{walkin}$. If donor number n of class k arrives than the inter-arrival time of donor number $n + 1$ of class k is determined. Depending the time slot in which donor n arrives, say it is time slot i^* , than the inter-arrival time of donor $n + 1$ is calculated with arrival rate belonging to time slot i^* of day d^* . The inter-arrival times of whole blood donors with appointment is fixed by appointment schedule $SS_{i,d}$.

Also in this simulation model each donor entering the blood donation location of the simulation will be assigned attributes. Those attributes are: class, value to indicate if donor will pass medical test (Bernoulli distribution), arrival time, service time phase 1, service time for phase 1 to 6, total sojourn time and total waiting time. The output of the simulation model are the attribute values of all (whole blood) donors that have gone through all phases of the donation process. The attribute values are in order of the arrival times of the donors. To calculate the waiting time probabilities belonging to donors arriving in time slot i of day d Monte Carlo simulation is applied. This procedure is given in algorithm 5.

```

Data:  $C_{f,i,d}, \mu_f, \sigma_f, \lambda_{i,d}^{walkin}, \lambda_{i,d}^{plasma}, SS_{i,d}, I$ 
Result: chance1, chance2
1 K1=zeros(72,2);
2 K2=zeros(72,2);
3 for i=1:I do
4     Run simulation model with arrival rates  $\lambda_{i,d}^{walkin}, \lambda_{i,d}^{plasma}, SS_{i,d}$ , service time parateters  $\mu_f, \sigma_f$  and number of staff members  $C_{f,i,d}$ ;
5     Determine T1, vector with the arrival times of all whole blood donors with appointment that have passed all phases;
6     Determine wait1, vector with the waiting times of all whole blood donors with appointment that have passed all phases;
7     Determine T2, vector with the arrival times of all whole blood donors without appointment that have passed all phases;
8     Determine wait2, vector with the waiting times of all whole blood donors without appointment that have passed all phases;
9     chances1=zeros(72,2);
10    chances2=zeros(72,2);
11    for j=1:size(T1) do
12        chances1([T1(i)/10] + 1, 2) = chances1([T1(i)/10] + 1, 2) + 1;
13        if wait1(1,1,i) > t then
14            chances1([T1(i)/10] + 1, 1) = chances1([T1(i)/10] + 1, 1) + 1;
15        end
16    end
17    end
18    for j=1:size(T2) do
19        chances2([T2(i)/10] + 1, 2) = chances2([T2(i)/10] + 1, 2) + 1;
20        if wait2(1,1,i) > t then
21            chances2([T2(i)/10] + 1, 1) = chances2([T2(i)/10] + 1, 1) + 1;
22        end
23    end
24    end
25    for j=1:72 do
26        if chances(j,2) > 0 then
27            K1(j,:) = K1(j,:) + [chances1(j,1)/(chances1(j,1)+chances1(j,2)), chances1(j,1)];
28        end
29        if chances(j,2) > 0 then
30            K2(j,:) = K2(j,:) + [chances2(j,1)/(chances2(j,1)+chances2(j,2)), chances2(j,1)];
31        end
32    end
33 end
34 chance1=K1(:,1)/K1(:,2);
35 chance2=K2(:,1)/K2(:,2);

```

Algorithm 5: Procedure to get indication of waiting time probabilities in practice

For the Monte Carlo simulation, the simulation model will run I times, line 3-33. How to determine the value of I is explained in section 7.3. First the simulation model will be run, line 4. The output of the simulation model will be the arrival times and waiting of the donors that have passed all phases of the donation process. The arrival times of the whole blood with/without appointment will be assigned to T1/T2 and the waiting times to wait1/wait2, line 5-8. For each arriving whole blood donor with appointment, the donor is numbered with i , it is determined in which time slot the arrival was, slot number $\lfloor T1(i)/10 \rfloor + 1$. For each time slot it is calculated how many whole blood donors with appointment have passed all phases of the donation process. This value is put in the vector chances1, line 12 of algorithm 5. Also for each time slot it is calculated how many whole blood donors with appointment have passed all phases of the donation process and had to wait longer than t minutes. This value is also put in vector chances1, line 14 of algorithm 5. Similar calculations are done for the whole blood donors without appointment, line 18-24 of algorithm 5. Now the probability of waiting longer than t minutes given that all phases of the donation process are passed, can be determined for the most recent simulation, line 25-32. For whole blood donors with appointment the probability of waiting longer than t minutes given that all phases of the donation process are passed, is $chances1(j,1)/chances1(j,2)$ (line 27 of algorithm 5). For whole blood donors without appointment the probability of waiting longer than t minutes given that all phases of the donation process

are passed, is $chances2(j,1)/chances2(j,2)$ (line 30 of algorithm 5). Just as for the first simulation model this probabilities belonging to simulation runs needs to be weighted. All probabilities are weighted and the weights are summed, line 25-33 of algorithm 5. The probability that whole blood donors with/without appointment have passed all phases of the donation process and had to wait longer than t minutes is determined by line 34 and 35 of algorithm 5. Both $chance1$ and $chance2$ are vectors with the size of the number of time slots. So if a whole blood donor with appointment arrives in time slot i^* than the probability of passing all phases of the donation process and waiting longer than t minutes is put in entry i^* of vector $chance1$.

This is needed to calculate the probability of waiting longer than t minutes if a donor arrives in slot i

7.3 Determining number of runs

To get statistically strong results, the value of the integer I in algorithm 4 and algorithm 5 should be big enough. The theory of confidence intervals is therefore applied.

A confidence interval is of the form in (18).

$$(\bar{x} - t^* \frac{s}{\sqrt{n}}, \bar{x} + t^* \frac{s}{\sqrt{n}}) \quad (18)$$

In (18) $\bar{x}$ is the sample mean, s the estimated standard deviation and n the sample size. Further t^* is the critical value for the student's t distribution with $n-1$ degrees of freedom. A 90% confidence interval means that $t^* \frac{s}{\sqrt{n}} \cdot 100 < 5\%$.

In case of algorithm 4 and algorithm 5, the waiting time probability of whole blood donors with and without appointment has to be calculated. Therefore $\bar{x}_1/\bar{x}_2$ is defined as in (19).

$$\bar{x}_1 = \frac{\sum_{n=1}^I x_{1,n} \mathbb{1}(N_{1,n} > 0)}{\sum_{n=1}^I \mathbb{1}(N_{1,n} > 0)}; \quad \bar{x}_2 = \frac{\sum_{n=1}^I x_{2,n} \mathbb{1}(N_{2,n} > 0)}{\sum_{n=1}^I \mathbb{1}(N_{2,n} > 0)} \quad (19)$$

In 19 $x_{1,n}/x_{2,n}$ is the average waiting time of whole blood donors with/without appointment in simulation number n . The number of whole blood donors with/without appointment passing all phases of the donation process in simulation number n is defined by $N_{1,n}/N_{2,n}$. Further s_1 is the standard deviation calculated over the values of $x_{1,n}, n = 1 \dots I$ and s_2 is the standard deviation calculated over the values of $x_{2,n}, n = 1 \dots I$. For both algorithms, algorithm 4 and 5, a 90% confidence interval is used. The value of parameter I should be calculated for both algorithm separately. If the value of parameter I is big enough than the equations in (20) are satisfied.

$$t^* \frac{s_1}{\sqrt{I}} < 0.05; \quad t^* \frac{s_2}{\sqrt{I}} < 0.05 \quad (20)$$

8 Results

8.1 Comparing waiting time models section 5.1 and 5.2

In section 5 two waiting time models are introduced. The first waiting time model, see section 5.1, is closer to the reality of the blood donation process as the second waiting time model, see section 5.2. This induces that the first waiting time model is a better model to use in algorithm 3 to find a good appointment schedule. To check this some comparisons are done.

First a test case is defined. To make this test case the arrival rates, service rates and number of staff members of the blood donation location in Enschede are used. The blood donation location in Enschede is quite small, therefore a big location is made with the data of Enschede. The test case is three times bigger than the real location Enschede. So the arrival rates of Enschede are multiplied with three, just like the number of staff members. The last thing is to define the penalty function. This function is defined as in (21)

$$\begin{aligned} \text{Penalty}(R_2(i, d)) &= \begin{cases} 1000, & SS_{i,d} + \lambda_{i,d}^{plasma} < \bar{C}_{f,i,d} \\ 0, & \text{else} \end{cases} \\ \text{Penalty}(R_3(i, d)) &= \begin{cases} 10, & SS_{i,d} + \lambda_{i,d}^{walkin} + \lambda_{i,d}^{plasma} < \bar{C}_{f,i,d} \\ 0, & \text{else} \end{cases} \end{aligned} \quad (21)$$

To compare the two waiting time models, first the first waiting time model is used to find a good schedule. Then the computations of finding a good schedule are done again, this time using the second waiting time model. To decide which waiting time model is better, the rates belonging to the schedules are used (see section 6.2). As the first waiting time model takes much computation time, the parameter I of algorithm 3 is set to 250. If algorithm 3 is run with the first waiting time model than schedule SS_1 is the output, see appendix 0.1. Running algorithm 3 with the second waiting time model gives schedule SS_2 as output, see appendix 0.2.

First schedule SS_1 is evaluated with the second waiting time model to have a good comparison with the schedule SS_2 . This gives the waiting time probabilities in appendix 0.7 and 0.8. If the location is not open than the table with the waiting time probabilities has a value 1000 for this time slot. The waiting time probabilities belonging to schedule SS_2 are given in appendix 0.5 and 0.6. With the rating formulas in (15) and (16), and the penalty function in (21) the schedules are rated. The rates belonging to schedule SS_1 are 14.3701 for whole blood donors with appointment and 64.3799 for whole blood donors without appointment. The rates belonging to schedule SS_2 are 14.4614 for whole blood donors with appointment and 64.4352 for whole blood donors without appointment. This shows that using the first waiting model in algorithm 3 gives a better schedule, both rates belonging to schedule SS_1 are lower than the rates belonging to schedule SS_2 . The difference between the rates is small. This indicates that the second waiting time model is a good representative for the first waiting time model. Further schedule SS_2 is evaluated with the first waiting time model to have a good comparison with the schedule SS_1 . This gives the waiting time probabilities in appendix 0.9 and 0.10. The waiting time probabilities belonging to schedule SS_1 are given in appendix 0.3 and 0.4. With the rating formulas in (15) and (16), and the penalty function in (21) the schedules are rated. The rates belonging to schedule SS_1 are 14.2142 for whole blood donors with appointment and 78.8775 for whole blood donors without appointment. The rates belonging to schedule SS_2 are 14.2363 for whole blood donors with appointment and 78.9222 for whole blood donors without appointment. This shows that using the first waiting model in algorithm 3 gives a better schedule, both rates belonging to schedule SS_1 are lower than the rates belonging to schedule SS_2 . The difference between the rates is again small, so another indication that the second waiting time model is a good representative for the first waiting time model. The rates belonging to schedule SS_1 are 14.2142 for whole blood donors with appointment and 78.8775 for whole blood donors without appointment. The rates belonging to schedule SS_2 are 14.2363 for whole blood donors with appointment and 78.9222 for whole blood donors without appointment. Again the difference between the rates is small, another indication that the second waiting time model is a good representative for the first waiting time model.

As the second waiting time model has a low computation time, algorithm 3 with the second waiting time models and parameter $I = 1000$ is run 30 times. This is done to strengthen the fact that the first waiting time model is better than the second waiting time model, but with tiny difference. This means multiple "good" schedules are calculated with corresponding waiting time probabilities. The waiting time probabilities are summed and divided by 30. These average waiting time probabilities are used for rating the second waiting time model. Again the schedule SS_1 is evaluated with the second waiting time model to have a good comparison. The rates belonging to the average waiting time probabilities are 14.4122 for whole blood donors with appointment and 64.4041 for whole blood donors without appointment.

Concluding, using the first waiting time model in algorithm 3 to find a good schedule gives a better schedule than using the second waiting time model. The differences are small, this gives a strong indication that the second waiting time model is a good replacement for the first waiting time model.

8.2 Simulation model 1

For both waiting time models in section 5 the assumption is made that the phases of the donation process are independent. In practice this is not the case, therefore a simulation model is defined in section 4 to verify the consequences of this assumption. The same test case as in section 8.1 is used. The results of the simulation models are compared with the schedule computed with algorithm 3 using the first waiting time model (schedule SS_1). As the simulation needs some computation time, only the waiting time probabilities belonging to the first 15 time slots of the Monday are determined. The waiting time probabilities of the simulation model are given in table 3a. The waiting time probabilities computed with algorithm 3 using the first waiting time model are given in table 3b.

Table 2: Waiting time probabilities to verify assumption independent phases in donation process

(a) Waiting time probabilities simulation model

time slot	$P(W_1 > 20)$	$P(W_2 > 20)$
1		0.3902
2	0.0918	0.1520
3	0.1441	0.1980
4	0.1996	0.2416
5	0.1083	0.1535
6	0.1214	0.1750
7	0.1624	0.1933
8	0.1086	0.1361
9	0.1694	0.2172
10	0.0809	0.1353
11	0.1359	0.2067
12	0.1783	0.2254
13	0.1181	0.1508
14	0.1346	0.2097
15	0.0906	0.1484

(b) Waiting time probabilities schedule SS_1

time slot	$P(W_1 > 20)$	$P(W_2 > 20)$
1		0.5461
2	0.1064	0.1906
3	0.1336	0.3557
4	0.1743	0.4356
5	0.0877	0.2313
6	0.1054	0.2444
7	0.1586	0.2718
8	0.1105	0.2085
9	0.1562	0.4133
10	0.0708	0.2076
11	0.1306	0.2807
12	0.1293	0.3994
13	0.0811	0.2338
14	0.0877	0.2313
15	0.0538	0.1648

In table 2 W_1 is the stochastic variable for waiting time in case of whole blood donors with appointment and W_2 is the stochastic variable for waiting time in case of whole blood donors without appointment. The waiting time probabilities belonging to whole blood donors without appointment are always lower for the simulation model. For most time slots the waiting time probabilities belonging to whole blood donors with appointment are higher for the simulation model. The waiting time probabilities are higher, but not much higher. That the waiting time probabilities belonging to schedule SS_1 are worse or just a bit better than the waiting time probabilities of the simulation model, gives reason to believe that the assumption of independent phases of the donation process is defensible.

8.3 Simulation model 2

In section 8.1 a schedule (SS_1) is determined for a test case using algorithm 3 with the second waiting time model. It would be nice to know how this schedule will work out in practice, therefore a second simulation model is defined in section 7.2. With the simulation model the probability that whole blood donors have to wait longer than 10 minutes in total and the probability that whole blood donors have to wait longer than 2 minutes in total is determined for each time slot on each day. The probability of waiting longer than 10 minutes is zero according to the simulation model for whole blood donors with and without appointment. It does not make a difference in which time slot a whole blood donor arrives. In the tables in 4 the probabilities of waiting longer than 2 minutes is shown.

Table 4: The probability of waiting longer than 2 minutes

(a) $P(W_1 > 2)$

time slot	Monday	Tuesday	Wednesday	Thursday	Friday
1.0000	-	-	-	-	-
2.0000	1.0000	-	1.0000	-	-
3.0000	0.3333	-	0.5000	-	1.0000
4.0000	0.6667	-	-	-	-
5.0000	-	-	-	-	-
6.0000	-	-	-	-	-
7.0000	-	-	-	-	-
8.0000	1.0000	-	0.5000	-	0.5000
9.0000	0.9630	-	-	-	-
10.0000	-	-	-	-	-
11.0000	-	-	-	-	-
12.0000	-	-	1.0000	-	-
13.0000	-	-	-	-	-
14.0000	-	-	0.6667	-	-
15.0000	-	-	-	-	0.5556
16.0000	-	-	-	-	-
17.0000	0.3333	-	-	-	0.4167
18.0000	-	-	-	-	0.5333
19.0000	-	-	-	-	-
20.0000	-	-	-	-	-
21.0000	-	-	-	-	-
22.0000	-	-	-	-	-
23.0000	-	-	-	-	-
24.0000	-	-	-	-	-
25.0000	0.3333	-	-	-	-
26.0000	-	-	-	-	-
27.0000	-	-	-	-	-
28.0000	-	-	-	-	-
29.0000	-	1.0000	-	-	-
30.0000	0.3333	-	-	-	-
31.0000	-	-	-	-	-
32.0000	0.5000	-	-	-	-
33.0000	-	-	-	-	-
34.0000	0.3333	-	-	-	-
35.0000	0.6667	-	-	-	-
36.0000	-	-	-	-	-
37.0000	-	-	-	-	-
38.0000	0.2500	-	-	-	-
39.0000	0.3333	-	-	-	-
40.0000	-	-	-	-	-
41.0000	0.3333	-	-	-	-
42.0000	-	-	-	-	-
43.0000	-	-	-	-	-
44.0000	0.5000	-	-	-	-
45.0000	-	0.2500	-	-	-
46.0000	0.3333	-	-	-	-
47.0000	-	-	-	-	-
48.0000	0.3056	0.3333	-	-	-
49.0000	-	-	-	-	-
50.0000	0.3333	0.3333	-	-	-
51.0000	-	-	-	-	-
52.0000	-	-	-	-	-
53.0000	-	-	-	-	-
54.0000	-	-	-	-	-
55.0000	1.0000	-	-	-	-
56.0000	0.3333	-	-	-	-
57.0000	-	-	-	-	-
58.0000	-	-	-	-	-
59.0000	0.5000	-	-	-	-
60.0000	0.6206	-	-	-	-
61.0000	-	-	-	-	-
62.0000	-	-	-	-	-
63.0000	0.5000	-	-	-	-
64.0000	-	-	-	-	-
65.0000	0.5000	-	-	-	-
66.0000	-	-	-	-	-
67.0000	-	-	-	-	-
68.0000	-	-	-	-	-
69.0000	0.6250	-	-	-	-
70.0000	0.5000	-	-	-	-
71.0000	0.5000	-	-	-	-
72.0000	0.2500	-	-	-	-

(b) $P(W_2 > 2)$

time slot	Monday	Tuesday	Wednesday	Thursday	Friday
1.0000	-	-	0.5000	-	-
2.0000	-	-	1.0000	-	0.5000
3.0000	-	-	-	-	-
4.0000	-	-	-	-	-
5.0000	-	-	-	-	-
6.0000	-	-	-	-	-
7.0000	-	-	-	-	-
8.0000	-	-	1.0000	-	1.0000
9.0000	-	-	1.0000	-	-
10.0000	-	-	-	-	-
11.0000	0.6667	-	1.0000	-	0.5000
12.0000	-	-	-	-	-
13.0000	1.0000	-	1.0000	-	-
14.0000	-	-	-	-	-
15.0000	-	-	-	-	-
16.0000	-	-	-	-	-
17.0000	-	-	-	-	0.5000
18.0000	-	-	0.5000	-	1.0000
19.0000	-	-	-	-	-
20.0000	-	-	-	-	-
21.0000	-	-	-	-	-
22.0000	-	-	-	-	-
23.0000	-	-	-	-	-
24.0000	-	-	-	-	-
25.0000	-	-	-	-	-
26.0000	-	-	-	-	-
27.0000	-	-	-	-	-
28.0000	0.3333	-	-	-	-
29.0000	-	1.0000	-	-	-
30.0000	-	-	-	-	-
31.0000	-	-	-	-	-
32.0000	-	-	-	-	-
33.0000	-	-	-	-	-
34.0000	-	-	-	-	-
35.0000	0.2500	-	-	-	-
36.0000	-	-	-	-	-
37.0000	-	-	-	-	-
38.0000	1.0000	-	-	-	-
39.0000	-	-	-	-	-
40.0000	-	-	-	-	-
41.0000	-	-	-	-	-
42.0000	-	-	-	-	-
43.0000	-	-	-	-	-
44.0000	-	-	-	-	-
45.0000	-	-	-	-	-
46.0000	0.3000	-	-	-	-
47.0000	0.6667	-	-	-	-
48.0000	-	1.0000	-	-	-
49.0000	-	-	-	-	-
50.0000	-	-	-	-	-
51.0000	-	-	-	-	-
52.0000	-	-	-	-	-
53.0000	-	-	-	-	-
54.0000	-	-	-	-	-
55.0000	-	-	-	-	-
56.0000	-	-	-	-	-
57.0000	-	-	-	-	-
58.0000	-	-	-	-	-
59.0000	0.3333	-	-	-	-
60.0000	-	-	-	-	-
61.0000	-	-	-	-	-
62.0000	-	-	-	-	-
63.0000	-	-	-	-	-
64.0000	-	-	-	-	-
65.0000	-	-	-	-	-
66.0000	-	-	-	-	-
67.0000	1.0000	-	-	-	-
68.0000	-	-	-	-	-
69.0000	0.3750	-	-	-	-
70.0000	-	-	-	-	-
71.0000	-	0.5000	-	-	-
72.0000	-	-	-	-	-

In table 5a probability of waiting longer than 2 minutes is shown in case of whole blood donors with appointment ($P(W_1 > 2)$). In table 5b probability of waiting longer than 2 minutes is shown in case of whole blood donors without appointment ($P(W_2 > 2)$). If there is a "-" in the table 5a or table 5b than the probability of waiting longer than 2 minutes is zero. Remarkable is the fact that the probability of waiting is higher for whole blood donors with appointment than for whole blood donors without appointment arriving in the same time slot. A reason for this outcome is that whole blood donors with appointment arrive at the beginning of a time slot and whole blood donors without appointment during the time slot. A whole blood donors without appointment that arrives just before a whole blood donor with appointment will get service before the whole blood donor with appointment. This means the whole blood donor with appointment will have to wait. That whole blood donors with appointment sometimes have to wait and whole blood donors without appointment not is a consequence of using appointments. If there are only walk-in donors or only donors with appointment this effect will not be seen.

Interesting is also to know how much the probability of waiting will change if the current situation with 100% walk-

in donors will change to 80% donors with appointment and 20% walk-in donors. Therefore the second simulation model is used to for the current situation with 100% walk-in donors. Just a in the case of 80% donors with appointment and 20% walk-in donors the probability of waiting longer than 10 minutes in total is zero in case of 100% walk-in donors. The probability of waiting longer than 2 minutes in total is shown in table 6.

Table 6: Only walk-in whole blood donors

time slot	Monday	Tuesday	Wednesday	Thursday	Friday
1.0000	0.6000	-	0.6880	-	0.4184
2.0000	0.6146	-	0.5379	-	0.7850
3.0000	0.5000	-	0.4000	-	0.4444
4.0000	-	-	-	-	-
5.0000	-	-	-	-	-
6.0000	-	-	-	-	0.2500
7.0000	-	-	-	-	0.3333
8.0000	0.2500	-	0.3333	-	0.2857
9.0000	0.5000	-	-	-	-
10.0000	0.3333	-	0.1111	-	0.3333
11.0000	0.3889	-	-	-	0.2000
12.0000	-	-	0.4000	-	0.1944
13.0000	0.5000	-	0.5000	-	0.2083
14.0000	-	-	0.2500	-	0.1714
15.0000	-	-	0.3333	-	0.2500
16.0000	-	-	-	-	0.3333
17.0000	-	-	-	-	-
18.0000	-	-	-	-	-
19.0000	-	-	-	-	-
20.0000	0.3333	-	-	-	-
21.0000	-	-	-	-	-
22.0000	-	-	-	-	-
23.0000	0.6000	-	-	-	-
24.0000	-	-	-	-	-
25.0000	-	-	-	-	-
26.0000	-	-	-	-	-
27.0000	-	-	-	-	-
28.0000	0.4167	0.3490	-	-	-
29.0000	-	0.6808	-	-	-
30.0000	-	0.7318	-	-	-
31.0000	0.1429	0.2998	-	-	-
32.0000	-	0.3333	-	-	-
33.0000	-	0.2670	-	-	-
34.0000	0.2107	0.5875	-	-	-
35.0000	0.3667	0.4847	-	-	-
36.0000	0.3333	0.3333	-	-	-
37.0000	0.1667	0.5920	-	-	-
38.0000	-	0.4667	-	-	-
39.0000	-	-	-	-	-
40.0000	-	-	-	-	-
41.0000	-	-	-	-	-
42.0000	-	-	-	-	-
43.0000	-	0.3333	-	-	-
44.0000	-	-	-	-	-
45.0000	-	1.0000	-	-	-
46.0000	-	-	-	-	-
47.0000	-	-	-	-	-
48.0000	-	-	-	-	-
49.0000	-	0.1667	-	-	-
50.0000	-	0.2500	-	-	-
51.0000	0.5000	0.3333	-	-	-
52.0000	-	-	-	-	-
53.0000	-	-	-	-	-
54.0000	-	0.4167	-	-	-
55.0000	-	0.6250	-	-	-
56.0000	-	0.3333	-	-	-
57.0000	-	0.5000	-	-	-
58.0000	1.0000	-	-	-	-
59.0000	0.7500	0.5000	-	-	-
60.0000	0.3333	-	-	-	-
61.0000	0.3333	0.8333	-	-	-
62.0000	0.4222	0.3056	-	-	-
63.0000	-	-	-	-	-
64.0000	0.3638	0.2132	-	-	-
65.0000	0.8536	0.8158	-	-	-
66.0000	0.5347	0.2356	-	-	-
67.0000	0.5846	0.4008	-	-	-
68.0000	0.6369	0.6684	-	-	-
69.0000	0.7341	0.5618	-	-	-
70.0000	0.9357	0.5736	-	-	-
71.0000	0.8333	-	-	-	-
72.0000	-	-	-	-	-

If the tables 5a, 5b and 6 are compared, it can be seen that in table 6 there are more time slots where the probability of waiting bigger than zero. Further the range of probabilities in the tables 5a/5b and in the table 6 is between zero and one. To compare the case for 80% whole blood donors with appointment and 20% whole blood donors without appointment with the case of 100% walk-in donors, for each time slot the biggest probability is chosen from table 5a and 5b. So if for a certain time slot the probability in table 5a is bigger than the probability in table 5b take

the probability of table 5a, otherwise take the probability from table 5b. For this new table, which consists of the maximum values from table 5a and table 5b, calculate the mean probability. This mean probability is 0.6378. Also the mean probability of table 6 is calculated. This mean probability is 0.4515. So in the case of 100% walk-in, donors have to wait more often, but the probability of waiting longer than 2 minutes is often lower.

8.4 Schedules with different penalty functions

The penalty function in the rating formulas (see (15) and (16)) has much influence on how appointment schedules are rated. The cost function used for the test case in section 8.1 does not take into account that a workload of almost one can cause much waiting time. The penalty function only gives a penalty if the workload is greater than one or equal as one, so if there is not enough service capacity to handle the arriving donors. To see the influence of a penalty and to be able to find better schedules another penalty function is considered. This penalty function is defined in (22).

$$\begin{aligned} \text{Penalty}(R_2(i, d)) &= \begin{cases} 1, & SS_{i,d} + \lambda_{i,d}^{plasma} < \bar{C}_{f,i,d} \\ 0, & \text{else} \end{cases} \\ \text{Penalty}(R_3(i, d)) &= \begin{cases} 0.5, & SS_{i,d} + \lambda_{i,d}^{walkin} + \lambda_{i,d}^{plasma} < \bar{C}_{f,i,d} \\ 0, & \text{else} \end{cases} \end{aligned} \quad (22)$$

In (22) $W_{2,i,d}$ is the waiting time of whole blood donors with appointment arriving in time slot i on day d and $W_{3,i,d}$ is the waiting time of whole blood donors without appointment arriving in time slot i on day d . The penalty function in (22) is the same as the penalty function from section 8.1, only the penalties are changed. Again the test case from section 8.1 is used. Algorithm 3 with the second waiting time model is used (see section 5.2) to determine an appointment schedule. This gives schedule SS_3 , see appendix 0.13. The parameter I of algorithm 3 is set to 100000. The waiting time probabilities belonging to schedule SS_3 are in appendix 0.14 and 0.15. To compare schedule SS_3 with schedule SS_1 the second simulation model is run with schedule SS_3 for the arrivals of whole blood donors with appointment. The probability that whole blood donors have to wait longer than 10 minutes is also zero if this schedule is used. The probabilities of waiting longer than 2 minutes is given in table 8a and table 8b.

Table 7: The probability of waiting longer than 2 minutes

(a) $P(W_1 > 2)$

time slot	Monday	Tuesday	Wednesday	Thursday	Friday
1.0000	-	-	-	-	-
2.0000	-	-	1.0000	-	-
3.0000	-	-	0.5000	-	-
4.0000	-	-	0.5000	-	0.5000
5.0000	-	-	-	-	-
6.0000	-	-	-	-	-
7.0000	-	-	-	-	-
8.0000	-	-	0.5000	-	-
9.0000	-	-	0.4167	-	-
10.0000	-	-	-	-	-
11.0000	-	-	-	-	-
12.0000	-	-	-	-	-
13.0000	-	-	-	-	-
14.0000	-	-	-	-	-
15.0000	-	-	-	-	-
16.0000	-	-	-	-	0.5000
17.0000	-	-	0.5000	-	-
18.0000	-	-	0.2917	-	0.2500
19.0000	-	-	-	-	-
20.0000	-	-	-	-	-
21.0000	-	-	-	-	-
22.0000	-	-	-	-	-
23.0000	-	-	-	-	-
24.0000	-	-	-	-	-
25.0000	-	-	-	-	-
26.0000	-	-	-	-	-
27.0000	-	-	-	-	-
28.0000	-	-	-	-	-
29.0000	-	-	-	-	-
30.0000	-	-	-	-	-
31.0000	-	0.5000	-	-	-
32.0000	-	-	-	-	-
33.0000	-	-	-	-	-
34.0000	-	-	-	-	-
35.0000	-	-	-	-	-
36.0000	-	-	-	-	-
37.0000	-	-	-	-	-
38.0000	-	0.3333	-	-	-
39.0000	-	-	-	-	-
40.0000	-	0.3333	-	-	-
41.0000	-	-	-	-	-
42.0000	-	-	-	-	-
43.0000	-	-	-	-	-
44.0000	-	-	-	-	-
45.0000	-	0.2639	-	-	-
46.0000	-	-	-	-	-
47.0000	-	-	-	-	-
48.0000	-	-	-	-	-
49.0000	-	-	-	-	-
50.0000	-	-	-	-	-
51.0000	-	0.3333	-	-	-
52.0000	-	-	-	-	-
53.0000	-	-	-	-	-
54.0000	-	-	-	-	-
55.0000	-	-	-	-	-
56.0000	-	-	-	-	-
57.0000	-	-	-	-	-
58.0000	-	-	-	-	-
59.0000	-	-	-	-	-
60.0000	-	-	-	-	-
61.0000	-	0.8333	-	-	-
62.0000	-	-	-	-	-
63.0000	-	0.5000	-	-	-
64.0000	-	-	-	-	-
65.0000	-	-	-	-	-
66.0000	-	1.0000	-	-	-
67.0000	-	-	-	-	-
68.0000	-	-	-	-	-
69.0000	-	-	-	-	-
70.0000	-	0.9167	-	-	-
71.0000	-	0.3333	-	-	-
72.0000	-	0.3333	-	-	-

(b) $P(W_2 > 2)$

time slot	Monday	Tuesday	Wednesday	Thursday	Friday
1.0000	-	-	1.0000	-	0.3333
2.0000	-	-	1.0000	-	0.7778
3.0000	-	-	-	-	-
4.0000	-	-	-	-	-
5.0000	-	-	-	-	-
6.0000	-	-	-	-	-
7.0000	-	-	-	-	-
8.0000	-	-	-	-	-
9.0000	-	-	1.0000	-	-
10.0000	-	-	1.0000	-	-
11.0000	-	-	-	-	-
12.0000	-	-	-	-	-
13.0000	-	-	-	-	0.3333
14.0000	-	-	-	-	-
15.0000	-	-	-	-	-
16.0000	-	-	0.5000	-	-
17.0000	-	-	1.0000	-	-
18.0000	-	-	1.0000	-	-
19.0000	-	-	-	-	-
20.0000	-	-	-	-	-
21.0000	-	-	-	-	-
22.0000	-	-	-	-	-
23.0000	-	-	-	-	-
24.0000	-	-	-	-	-
25.0000	-	-	-	-	-
26.0000	-	-	-	-	-
27.0000	-	-	-	-	-
28.0000	-	-	-	-	-
29.0000	-	-	-	-	-
30.0000	-	1.0000	-	-	-
31.0000	-	-	-	-	-
32.0000	-	-	-	-	-
33.0000	-	-	-	-	-
34.0000	-	-	-	-	-
35.0000	-	-	-	-	-
36.0000	-	-	-	-	-
37.0000	-	-	-	-	-
38.0000	-	-	-	-	-
39.0000	-	-	-	-	-
40.0000	-	-	-	-	-
41.0000	-	1.0000	-	-	-
42.0000	-	-	-	-	-
43.0000	-	-	-	-	-
44.0000	-	-	-	-	-
45.0000	-	1.0000	-	-	-
46.0000	-	-	-	-	-
47.0000	-	-	-	-	-
48.0000	-	-	-	-	-
49.0000	-	-	-	-	-
50.0000	-	1.0000	-	-	-
51.0000	-	-	-	-	-
52.0000	-	-	-	-	-
53.0000	-	-	-	-	-
54.0000	-	-	-	-	-
55.0000	-	-	-	-	-
56.0000	-	-	-	-	-
57.0000	-	1.0000	-	-	-
58.0000	-	-	-	-	-
59.0000	-	-	-	-	-
60.0000	-	0.3333	-	-	-
61.0000	-	-	-	-	-
62.0000	-	-	-	-	-
63.0000	-	-	-	-	-
64.0000	-	-	-	-	-
65.0000	-	-	-	-	-
66.0000	-	-	-	-	-
67.0000	-	-	-	-	-
68.0000	-	-	-	-	-
69.0000	-	1.0000	-	-	-
70.0000	-	-	-	-	-
71.0000	-	-	-	-	-
72.0000	-	-	-	-	-

In table 8a probability of waiting longer than 2 minutes is shown in case of whole blood donors with appointment ($P(W_1 > 2)$). In table 8b probability of waiting longer than 2 minutes is shown in case of whole blood donors without appointment ($P(W_2 > 2)$). If there is a "-" in the table 8a or table 8b than the probability of waiting longer than 2 minutes is zero. The range of the probabilities in the tables 8a/8b is between zero and one. Comparing the tables 8a and 8b with the tables 5a and 5b it is remarkable that the less time slots of tables 8a and 8b have waiting time probabilities. Especially on Monday, there is no waiting time probability is schedule SS_3 is used. It looks like the penalty function defined in 22 is better than the penalty function defined in 21.

9 Conclusion and Recommendations

9.1 Conclusion

In this thesis appointment scheduling for whole blood donors is investigated. Whole blood donors currently come on walk-in basis. In the near future making an appointment should be possible. The aim is to have 80% of whole blood donors with appointment and remaining 20% will come on walk-in basis. The study is specified to fixed locations. At those fixed location donors plasma donation and whole blood donation is done. During the literature review it became clear that the amount of literature about blood donation is very limited. There is some literature about the arrival pattern of blood donors. Modeling is only done in two papers, but not as extensively as in this thesis.

First the arrival patterns of whole blood donors at locations of the Dutch blood bank Sanquin are studied. Insight in the arrival patterns is necessary to schedule appointments. Studying the arrival patterns, shows that the arrival patterns of days with the same session have similar arrival patterns. As expected days with different sessions have no similar arrival patterns. Also the service time at each phase of the donation process is studied. Different probability distributions are fitted. It became clear that there is not enough data to get a fit that is statistically valid. The exponential distribution and the lognormal distribution are the best option to use.

Blood donors come voluntarily, so it is important to keep them satisfied. The total waiting time at a blood donation location is the key factor for donor satisfaction. Therefore to waiting time models a defined to give an indication of the total waiting time if donors arrive in a certain time slot. The first waiting time model uses a network of non-preemptive $M/M/c$ queues with priorities. Each phase of the donation process is modeled as a non-preemptive $M/M/c$ queues with priorities. This type of queue is found in the literature about queues. The total waiting is calculated via the Laplace-Stieltjes transform of the waiting time distribution. To get the total waiting time, the inverse Laplace-Stieltjes transform has to be done. This inverse transform can not be done analytical, so this is done numerically. Calculating the total waiting time with this model takes much time, to much time to use this model for determining a good appointment schedule. To determine a good appointment schedule the waiting time has to be calculated many times. Therefore a second waiting time model is defined. This model uses a network of $M/M/1$ queues. Each donor type at each phase of the donation process is modeled as a $M/M/1$. Each donor type at each phase of the donation process has its own available service capacity. As plasma donors have the highest priority they can use all available capacity. Whole blood donors with appointment can use all available capacity minus the capacity needed for plasma donors. Whole blood donor without appointment get the remaining capacity. This way the plasma donors will have the highest priority, then whole blood donors with appointment and whole blood donors without appointment will have the lowest priority. The waiting time formula of a $M/M/1$ is simple enough to analytically compute the distribution for the total waiting time for each donor type.

To find a good appointment, appointment schedules need to be generated and evaluated. First a heuristic is determined to calculate an initial schedule. A second heuristic uses this initial schedule to generate more schedules. To evaluate these generated schedules the second waiting time model is used. An cost function uses the waiting time probabilities to rate a schedule. A lower rating means a better schedule.

To compare the two waiting time models a small test case is defined. For this test case an appointment schedule is calculated using waiting time model one and an appointment schedule is calculated using waiting time model two. The rating belonging to the schedule computed with the first waiting time model is better lower than the rating belonging to the schedule computed with the second waiting time model, but the differences are very small. This means that the second waiting time model is a good replacement for the first waiting time model.

To calculate the total waiting time for both waiting time models it is assumed that the phases of the donation process are independent. This is not the case in practice. Therefore a simulation model is defined to verify how good/bas this assumption is. The same test case is used for the simulation model. The probability of waiting longer than 20 minutes is calculated. For the whole blood donors with appointment the simulation model gives in most cases a higher probability than the second waiting time model, but the difference is very small. For whole blood donors without appointment the simulation model gives lower probabilities than the second waiting time model. This gives reason to say that the assumption of independent phases is valid.

A second simulation model is defined to find out how an appointment schedule will work out in practice. Also the current situation with 100% walk-in donors is evaluated with simulation model. In both cases the probability of waiting longer than 10 minutes is zero. In current situation with 100% walk-in there are more time slots where there is a probability of waiting longer than 2 minutes than for the future situation with 80% appointments and 20% walk-in. The probability of waiting is general higher in the future situation. The mean probability of waiting longer than 2 minutes is therefore smaller for the current situation. That the probability of waiting longer than 10 minutes is also zero for the future situation is good. There are no big differences between the current and future situation.

9.2 Recommendation

Further research can be done to make appointment scheduling better. The penalty function that is part of the cost function has influence on which schedule will be chosen as good schedule. More penalty functions have to be studied, such that even better appointment schedules can be determined. Also the algorithm to generate schedules can be improved. Further there was not enough service time data to properly fit a probability distribution. If the time that donors arrive at a phase of the donation process is registered than this is easily solvable.

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Appendix A

Schedules and waiting time probabilities from section 8

0.1

[illegible]Table A.1: schedule: $M/M/c$ waiting time model used

0.2

[illegible]Table A.2: Schedule: $M/M/1$ waiting time model used

0.3

0.0000	1000.0000	0.0000	1000.0000	0.0000
0.1064	1000.0000	0.2275	1000.0000	0.0000
0.1336	1000.0000	0.0739	1000.0000	0.0921
0.1743	1000.0000	0.1658	1000.0000	0.0739
0.0877	1000.0000	0.1664	1000.0000	0.0739
0.1054	1000.0000	0.1181	1000.0000	0.0731
0.1586	1000.0000	0.1522	1000.0000	0.1316
0.1105	1000.0000	0.1379	1000.0000	0.0884
0.1562	1000.0000	0.0746	1000.0000	0.0385
0.0708	1000.0000	0.1249	1000.0000	0.0994
0.1306	1000.0000	0.1701	1000.0000	0.0957
0.1293	1000.0000	0.2232	1000.0000	0.0823
0.0811	1000.0000	0.1581	1000.0000	0.1201
0.0877	1000.0000	0.0441	1000.0000	0.0517
0.0538	1000.0000	0.1076	1000.0000	0.0609
0.0564	1000.0000	0.0622	1000.0000	0.0495
0.1538	1000.0000	0.0514	1000.0000	0.0762
0.1588	1000.0000	0.0566	1000.0000	0.0527
0.1597	1000.0000	1000.0000	1000.0000	1000.0000
0.1203	1000.0000	1000.0000	1000.0000	1000.0000
0.1182	1000.0000	1000.0000	1000.0000	1000.0000
0.1189	1000.0000	1000.0000	1000.0000	1000.0000
0.0597	1000.0000	1000.0000	1000.0000	1000.0000
0.0416	1000.0000	1000.0000	1000.0000	1000.0000
0.0903	1000.0000	1000.0000	1000.0000	1000.0000
0.0704	1000.0000	1000.0000	1000.0000	1000.0000
0.0533	1000.0000	1000.0000	1000.0000	1000.0000
0.0920	0.0000	1000.0000	1000.0000	1000.0000
0.0537	0.0865	1000.0000	1000.0000	1000.0000
0.1696	0.0479	1000.0000	1000.0000	1000.0000
0.1271	0.0922	1000.0000	1000.0000	1000.0000
0.1293	0.0657	1000.0000	1000.0000	1000.0000
0.0780	0.0461	1000.0000	1000.0000	1000.0000
0.1127	0.1471	1000.0000	1000.0000	1000.0000
0.0662	0.1094	1000.0000	1000.0000	1000.0000
0.0676	0.0945	1000.0000	1000.0000	1000.0000
0.1030	0.1465	1000.0000	1000.0000	1000.0000
0.1737	0.0899	1000.0000	1000.0000	1000.0000
0.0382	0.1100	1000.0000	1000.0000	1000.0000
0.0838	0.0868	1000.0000	1000.0000	1000.0000
0.0448	0.1094	1000.0000	1000.0000	1000.0000
0.0358	0.0843	1000.0000	1000.0000	1000.0000
0.0397	0.0485	1000.0000	1000.0000	1000.0000
0.1106	0.0512	1000.0000	1000.0000	1000.0000
0.0330	0.1955	1000.0000	1000.0000	1000.0000
0.1580	0.1397	1000.0000	1000.0000	1000.0000
0.1447	0.1816	1000.0000	1000.0000	1000.0000
0.1638	0.0650	1000.0000	1000.0000	1000.0000
0.0459	0.0829	1000.0000	1000.0000	1000.0000
0.0622	0.0343	1000.0000	1000.0000	1000.0000
0.0418	0.0560	1000.0000	1000.0000	1000.0000
0.1538	0.0366	1000.0000	1000.0000	1000.0000
0.1504	0.0968	1000.0000	1000.0000	1000.0000
0.1819	0.0654	1000.0000	1000.0000	1000.0000
0.0472	0.0693	1000.0000	1000.0000	1000.0000
0.1203	0.0599	1000.0000	1000.0000	1000.0000
0.0916	0.1347	1000.0000	1000.0000	1000.0000
0.1526	0.0853	1000.0000	1000.0000	1000.0000
0.0671	0.1535	1000.0000	1000.0000	1000.0000
0.0866	0.1416	1000.0000	1000.0000	1000.0000
0.1372	0.1508	1000.0000	1000.0000	1000.0000
0.0539	0.0573	1000.0000	1000.0000	1000.0000
0.0354	0.0640	1000.0000	1000.0000	1000.0000
0.1129	0.1062	1000.0000	1000.0000	1000.0000
0.0361	0.1228	1000.0000	1000.0000	1000.0000
0.0816	0.0312	1000.0000	1000.0000	1000.0000
0.0761	0.0588	1000.0000	1000.0000	1000.0000
0.0705	0.0472	1000.0000	1000.0000	1000.0000
0.0276	0.0935	1000.0000	1000.0000	1000.0000
0.1327	0.1225	1000.0000	1000.0000	1000.0000
0.0412	0.0688	1000.0000	1000.0000	1000.0000
0.0376	0.0458	1000.0000	1000.0000	1000.0000

Table A.3: Waiting time probabilities of whole blood donors with appointment, schedule SS_1 evaluated with the first waiting time model

0.4

0.5461	1000.0000	1.0000	1000.0000	1.0000
0.1906	1000.0000	0.4332	1000.0000	0.1877
0.3557	1000.0000	0.2351	1000.0000	0.2656
0.4356	1000.0000	0.3984	1000.0000	0.1548
0.2313	1000.0000	0.2968	1000.0000	0.1548
0.2444	1000.0000	0.2921	1000.0000	0.1758
0.2718	1000.0000	0.2737	1000.0000	0.3021
0.2085	1000.0000	0.3573	1000.0000	0.2881
0.4133	1000.0000	0.3317	1000.0000	0.1540
0.2076	1000.0000	0.3342	1000.0000	0.2348
0.2807	1000.0000	0.4255	1000.0000	0.2913
0.3994	1000.0000	0.5078	1000.0000	0.2918
0.2338	1000.0000	0.4217	1000.0000	0.3284
0.2313	1000.0000	0.1839	1000.0000	0.2509
0.1648	1000.0000	0.4173	1000.0000	0.3362
0.1833	1000.0000	0.2284	1000.0000	0.2783
0.4809	1000.0000	0.2265	1000.0000	0.3746
0.4283	1000.0000	0.2937	1000.0000	0.3086
0.3801	1000.0000	1000.0000	1000.0000	1000.0000
0.4128	1000.0000	1000.0000	1000.0000	1000.0000
0.3978	1000.0000	1000.0000	1000.0000	1000.0000
0.4027	1000.0000	1000.0000	1000.0000	1000.0000
0.2546	1000.0000	1000.0000	1000.0000	1000.0000
0.1867	1000.0000	1000.0000	1000.0000	1000.0000
0.3309	1000.0000	1000.0000	1000.0000	1000.0000
0.2919	1000.0000	1000.0000	1000.0000	1000.0000
0.2466	1000.0000	1000.0000	1000.0000	1000.0000
0.3437	1.0000	1000.0000	1000.0000	1000.0000
0.2500	0.2259	1000.0000	1000.0000	1000.0000
0.4941	0.1941	1000.0000	1000.0000	1000.0000
0.2503	0.3461	1000.0000	1000.0000	1000.0000
0.3994	0.2249	1000.0000	1000.0000	1000.0000
0.2137	0.1781	1000.0000	1000.0000	1000.0000
0.4325	0.4294	1000.0000	1000.0000	1000.0000
0.3106	0.2498	1000.0000	1000.0000	1000.0000
0.2699	0.2030	1000.0000	1000.0000	1000.0000
0.4317	0.4246	1000.0000	1000.0000	1000.0000
0.5448	0.3694	1000.0000	1000.0000	1000.0000
0.2280	0.3952	1000.0000	1000.0000	1000.0000
0.3424	0.3447	1000.0000	1000.0000	1000.0000
0.2554	0.3908	1000.0000	1000.0000	1000.0000
0.2036	0.3253	1000.0000	1000.0000	1000.0000
0.1539	0.1646	1000.0000	1000.0000	1000.0000
0.4166	0.1858	1000.0000	1000.0000	1000.0000
0.1767	0.5310	1000.0000	1000.0000	1000.0000
0.4232	0.4614	1000.0000	1000.0000	1000.0000
0.4212	0.4845	1000.0000	1000.0000	1000.0000
0.5561	0.2756	1000.0000	1000.0000	1000.0000
0.2662	0.3142	1000.0000	1000.0000	1000.0000
0.2757	0.1959	1000.0000	1000.0000	1000.0000
0.2253	0.2457	1000.0000	1000.0000	1000.0000
0.4809	0.2198	1000.0000	1000.0000	1000.0000
0.4583	0.2659	1000.0000	1000.0000	1000.0000
0.4787	0.1850	1000.0000	1000.0000	1000.0000
0.1845	0.2105	1000.0000	1000.0000	1000.0000
0.4128	0.1816	1000.0000	1000.0000	1000.0000
0.2561	0.4273	1000.0000	1000.0000	1000.0000
0.4102	0.3943	1000.0000	1000.0000	1000.0000
0.2240	0.3332	1000.0000	1000.0000	1000.0000
0.3651	0.3253	1000.0000	1000.0000	1000.0000
0.3820	0.3796	1000.0000	1000.0000	1000.0000
0.2033	0.1985	1000.0000	1000.0000	1000.0000
0.1835	0.2119	1000.0000	1000.0000	1000.0000
0.3114	0.2735	1000.0000	1000.0000	1000.0000
0.1915	0.2856	1000.0000	1000.0000	1000.0000
0.4602	0.1657	1000.0000	1000.0000	1000.0000
0.3784	0.2086	1000.0000	1000.0000	1000.0000
0.1923	0.2857	1000.0000	1000.0000	1000.0000
0.1633	0.2941	1000.0000	1000.0000	1000.0000
0.4294	0.4156	1000.0000	1000.0000	1000.0000
0.2192	0.2587	1000.0000	1000.0000	1000.0000
0.2239	0.2562	1000.0000	1000.0000	1000.0000

Table A.4: Waiting time probabilities of whole blood donors without appointment, schedule SS_1 evaluated with the first waiting time model

0.0000	1000.0000	0.0000	1000.0000	0.0000
0.2301	1000.0000	0.0934	1000.0000	0.0000
0.1696	1000.0000	0.0609	1000.0000	0.0719
0.1975	1000.0000	0.1140	1000.0000	0.0329
0.0726	1000.0000	0.0716	1000.0000	0.0329
0.0860	1000.0000	0.0896	1000.0000	0.0303
0.0703	1000.0000	0.0656	1000.0000	0.0500
0.0481	1000.0000	0.0970	1000.0000	0.0667
0.1829	1000.0000	0.1098	1000.0000	0.0402
0.0615	1000.0000	0.0896	1000.0000	0.0389
0.1022	1000.0000	0.1140	1000.0000	0.0719
0.1574	1000.0000	0.0303	1000.0000	0.0619
0.0668	1000.0000	0.1051	1000.0000	0.0423
0.0726	1000.0000	0.0422	1000.0000	0.0431
0.0522	1000.0000	0.1330	1000.0000	0.0944
0.0522	1000.0000	0.0524	1000.0000	0.0402
0.1696	1000.0000	0.0971	1000.0000	0.1063
0.1829	1000.0000	0.1771	1000.0000	0.1640
0.1116	1000.0000	1000.0000	1000.0000	1000.0000
0.1462	1000.0000	1000.0000	1000.0000	1000.0000
0.1462	1000.0000	1000.0000	1000.0000	1000.0000
0.1462	1000.0000	1000.0000	1000.0000	1000.0000
0.1032	1000.0000	1000.0000	1000.0000	1000.0000
0.0906	1000.0000	1000.0000	1000.0000	1000.0000
0.1267	1000.0000	1000.0000	1000.0000	1000.0000
0.1104	1000.0000	1000.0000	1000.0000	1000.0000
0.0966	1000.0000	1000.0000	1000.0000	1000.0000
0.1267	0.0000	1000.0000	1000.0000	1000.0000
0.0966	0.0331	1000.0000	1000.0000	1000.0000
0.1829	0.0443	1000.0000	1000.0000	1000.0000
0.0529	0.0646	1000.0000	1000.0000	1000.0000
0.1574	0.0554	1000.0000	1000.0000	1000.0000
0.0668	0.0443	1000.0000	1000.0000	1000.0000
0.1361	0.0963	1000.0000	1000.0000	1000.0000
0.1032	0.0428	1000.0000	1000.0000	1000.0000
0.1104	0.0393	1000.0000	1000.0000	1000.0000
0.1267	0.0963	1000.0000	1000.0000	1000.0000
0.0710	0.1211	1000.0000	1000.0000	1000.0000
0.0799	0.1383	1000.0000	1000.0000	1000.0000
0.1182	0.1211	1000.0000	1000.0000	1000.0000
0.0850	0.1383	1000.0000	1000.0000	1000.0000
0.0799	0.1211	1000.0000	1000.0000	1000.0000
0.0412	0.0477	1000.0000	1000.0000	1000.0000
0.1361	0.0477	1000.0000	1000.0000	1000.0000
0.3149	0.3109	1000.0000	1000.0000	1000.0000
0.1829	0.1586	1000.0000	1000.0000	1000.0000
0.1696	0.1962	1000.0000	1000.0000	1000.0000
0.2664	0.1065	1000.0000	1000.0000	1000.0000
0.0850	0.1211	1000.0000	1000.0000	1000.0000
0.1032	0.0789	1000.0000	1000.0000	1000.0000
0.0850	0.1000	1000.0000	1000.0000	1000.0000
0.1696	0.0789	1000.0000	1000.0000	1000.0000
0.1696	0.0756	1000.0000	1000.0000	1000.0000
0.1975	0.0598	1000.0000	1000.0000	1000.0000
0.0446	0.0598	1000.0000	1000.0000	1000.0000
0.1462	0.0554	1000.0000	1000.0000	1000.0000
0.0726	0.1586	1000.0000	1000.0000	1000.0000
0.1022	0.1135	1000.0000	1000.0000	1000.0000
0.0566	0.1134	1000.0000	1000.0000	1000.0000
0.1182	0.1044	1000.0000	1000.0000	1000.0000
0.0937	0.1044	1000.0000	1000.0000	1000.0000
0.0482	0.0514	1000.0000	1000.0000	1000.0000
0.0354	0.0554	1000.0000	1000.0000	1000.0000
0.0399	0.0393	1000.0000	1000.0000	1000.0000
0.0354	0.0468	1000.0000	1000.0000	1000.0000
0.1032	0.0333	1000.0000	1000.0000	1000.0000
0.0522	0.0217	1000.0000	1000.0000	1000.0000
0.0277	0.0383	1000.0000	1000.0000	1000.0000
0.0306	0.0699	1000.0000	1000.0000	1000.0000
0.0860	0.1480	1000.0000	1000.0000	1000.0000
0.0850	0.1135	1000.0000	1000.0000	1000.0000
0.1556	0.1654	1000.0000	1000.0000	1000.0000

Table A.5: Waiting time probabilities of whole blood donors with appointment, schedule SS_2 evaluated with the second waiting time model

0.3570	1000.0000	1.0000	1000.0000	1.0000
0.4062	1000.0000	0.2727	1000.0000	0.0885
0.2321	1000.0000	0.1427	1000.0000	0.1598
0.3010	1000.0000	0.2572	1000.0000	0.0749
0.1288	1000.0000	0.1564	1000.0000	0.0749
0.1304	1000.0000	0.1701	1000.0000	0.0943
0.1361	1000.0000	0.1407	1000.0000	0.1792
0.1013	1000.0000	0.2269	1000.0000	0.1857
0.2840	1000.0000	0.2457	1000.0000	0.0962
0.1180	1000.0000	0.2097	1000.0000	0.1322
0.1520	1000.0000	0.2853	1000.0000	0.1836
0.2824	1000.0000	0.0785	1000.0000	0.1945
0.1359	1000.0000	0.2870	1000.0000	0.2135
0.1288	1000.0000	0.1199	1000.0000	0.1816
0.0910	1000.0000	0.3159	1000.0000	0.2642
0.1064	1000.0000	0.1463	1000.0000	0.2143
0.3626	1000.0000	0.1551	1000.0000	0.2921
0.2997	1000.0000	0.2338	1000.0000	0.2564
0.2400	1000.0000	1000.0000	1000.0000	1000.0000
0.3026	1000.0000	1000.0000	1000.0000	1000.0000
0.2870	1000.0000	1000.0000	1000.0000	1000.0000
0.2921	1000.0000	1000.0000	1000.0000	1000.0000
0.1763	1000.0000	1000.0000	1000.0000	1000.0000
0.1244	1000.0000	1000.0000	1000.0000	1000.0000
0.2321	1000.0000	1000.0000	1000.0000	1000.0000
0.2061	1000.0000	1000.0000	1000.0000	1000.0000
0.1744	1000.0000	1000.0000	1000.0000	1000.0000
0.2448	1.0000	1000.0000	1000.0000	1000.0000
0.1775	0.1324	1000.0000	1000.0000	1000.0000
0.3708	0.1260	1000.0000	1000.0000	1000.0000
0.1310	0.2450	1000.0000	1000.0000	1000.0000
0.2824	0.1394	1000.0000	1000.0000	1000.0000
0.1185	0.1116	1000.0000	1000.0000	1000.0000
0.3298	0.3015	1000.0000	1000.0000	1000.0000
0.2304	0.1404	1000.0000	1000.0000	1000.0000
0.1850	0.1053	1000.0000	1000.0000	1000.0000
0.3353	0.2964	1000.0000	1000.0000	1000.0000
0.1196	0.2748	1000.0000	1000.0000	1000.0000
0.1732	0.2893	1000.0000	1000.0000	1000.0000
0.2497	0.2498	1000.0000	1000.0000	1000.0000
0.1940	0.2848	1000.0000	1000.0000	1000.0000
0.1500	0.2306	1000.0000	1000.0000	1000.0000
0.0945	0.0957	1000.0000	1000.0000	1000.0000
0.3131	0.1140	1000.0000	1000.0000	1000.0000
0.4626	0.4163	1000.0000	1000.0000	1000.0000
0.2944	0.3472	1000.0000	1000.0000	1000.0000
0.2987	0.3543	1000.0000	1000.0000	1000.0000
0.4588	0.1936	1000.0000	1000.0000	1000.0000
0.2046	0.2197	1000.0000	1000.0000	1000.0000
0.1964	0.1439	1000.0000	1000.0000	1000.0000
0.1652	0.1705	1000.0000	1000.0000	1000.0000
0.3626	0.1666	1000.0000	1000.0000	1000.0000
0.3381	0.1568	1000.0000	1000.0000	1000.0000
0.3473	0.1005	1000.0000	1000.0000	1000.0000
0.1169	0.1220	1000.0000	1000.0000	1000.0000
0.3026	0.1018	1000.0000	1000.0000	1000.0000
0.1506	0.3108	1000.0000	1000.0000	1000.0000
0.2769	0.3063	1000.0000	1000.0000	1000.0000
0.1373	0.1935	1000.0000	1000.0000	1000.0000
0.2726	0.1913	1000.0000	1000.0000	1000.0000
0.2541	0.2441	1000.0000	1000.0000	1000.0000
0.1289	0.1206	1000.0000	1000.0000	1000.0000
0.1312	0.1278	1000.0000	1000.0000	1000.0000
0.2004	0.1659	1000.0000	1000.0000	1000.0000
0.1389	0.1676	1000.0000	1000.0000	1000.0000
0.3847	0.1187	1000.0000	1000.0000	1000.0000
0.2953	0.1391	1000.0000	1000.0000	1000.0000
0.1120	0.2258	1000.0000	1000.0000	1000.0000
0.1223	0.1881	1000.0000	1000.0000	1000.0000
0.3098	0.3045	1000.0000	1000.0000	1000.0000
0.1594	0.1723	1000.0000	1000.0000	1000.0000
0.1821	0.2058	1000.0000	1000.0000	1000.0000

Table A.6: Waiting time probabilities of whole blood donors without appointment, schedule SS_2 evaluated with the second waiting time model

0.7

0.0000	1000.0000	0.0000	1000.0000	0.0000
0.0481	1000.0000	0.0934	1000.0000	0.0000
0.1696	1000.0000	0.0609	1000.0000	0.0719
0.1975	1000.0000	0.1140	1000.0000	0.0329
0.0726	1000.0000	0.0716	1000.0000	0.0329
0.0860	1000.0000	0.0896	1000.0000	0.0303
0.0703	1000.0000	0.0656	1000.0000	0.0500
0.0481	1000.0000	0.0970	1000.0000	0.0667
0.1829	1000.0000	0.1098	1000.0000	0.0402
0.0615	1000.0000	0.0896	1000.0000	0.0389
0.1022	1000.0000	0.1140	1000.0000	0.0719
0.1574	1000.0000	0.1457	1000.0000	0.0619
0.0668	1000.0000	0.1051	1000.0000	0.0423
0.0726	1000.0000	0.0422	1000.0000	0.0431
0.0522	1000.0000	0.1330	1000.0000	0.0944
0.0522	1000.0000	0.0524	1000.0000	0.0402
0.1696	1000.0000	0.0971	1000.0000	0.1063
0.1829	1000.0000	0.1771	1000.0000	0.1640
0.1116	1000.0000	1000.0000	1000.0000	1000.0000
0.1462	1000.0000	1000.0000	1000.0000	1000.0000
0.1462	1000.0000	1000.0000	1000.0000	1000.0000
0.1462	1000.0000	1000.0000	1000.0000	1000.0000
0.1032	1000.0000	1000.0000	1000.0000	1000.0000
0.0906	1000.0000	1000.0000	1000.0000	1000.0000
0.1267	1000.0000	1000.0000	1000.0000	1000.0000
0.1104	1000.0000	1000.0000	1000.0000	1000.0000
0.0966	1000.0000	1000.0000	1000.0000	1000.0000
0.1267	0.0000	1000.0000	1000.0000	1000.0000
0.0966	0.0331	1000.0000	1000.0000	1000.0000
0.1829	0.0443	1000.0000	1000.0000	1000.0000
0.0529	0.0646	1000.0000	1000.0000	1000.0000
0.1574	0.0554	1000.0000	1000.0000	1000.0000
0.0668	0.0443	1000.0000	1000.0000	1000.0000
0.1361	0.0963	1000.0000	1000.0000	1000.0000
0.1032	0.0428	1000.0000	1000.0000	1000.0000
0.1104	0.0393	1000.0000	1000.0000	1000.0000
0.1267	0.0963	1000.0000	1000.0000	1000.0000
0.2812	0.1211	1000.0000	1000.0000	1000.0000
0.0799	0.1383	1000.0000	1000.0000	1000.0000
0.1182	0.1211	1000.0000	1000.0000	1000.0000
0.0850	0.1383	1000.0000	1000.0000	1000.0000
0.0799	0.1211	1000.0000	1000.0000	1000.0000
0.0412	0.0477	1000.0000	1000.0000	1000.0000
0.1361	0.0477	1000.0000	1000.0000	1000.0000
0.0799	0.3109	1000.0000	1000.0000	1000.0000
0.1829	0.1586	1000.0000	1000.0000	1000.0000
0.1696	0.1962	1000.0000	1000.0000	1000.0000
0.2664	0.1065	1000.0000	1000.0000	1000.0000
0.0850	0.1211	1000.0000	1000.0000	1000.0000
0.1032	0.0789	1000.0000	1000.0000	1000.0000
0.0850	0.1000	1000.0000	1000.0000	1000.0000
0.1696	0.0789	1000.0000	1000.0000	1000.0000
0.1696	0.0756	1000.0000	1000.0000	1000.0000
0.1975	0.0598	1000.0000	1000.0000	1000.0000
0.0446	0.0598	1000.0000	1000.0000	1000.0000
0.1462	0.0554	1000.0000	1000.0000	1000.0000
0.0726	0.1586	1000.0000	1000.0000	1000.0000
0.1022	0.1135	1000.0000	1000.0000	1000.0000
0.0566	0.1134	1000.0000	1000.0000	1000.0000
0.1182	0.1044	1000.0000	1000.0000	1000.0000
0.0937	0.1044	1000.0000	1000.0000	1000.0000
0.0482	0.0514	1000.0000	1000.0000	1000.0000
0.0354	0.0554	1000.0000	1000.0000	1000.0000
0.0399	0.0393	1000.0000	1000.0000	1000.0000
0.0354	0.0468	1000.0000	1000.0000	1000.0000
0.1032	0.0333	1000.0000	1000.0000	1000.0000
0.0522	0.0217	1000.0000	1000.0000	1000.0000
0.0277	0.0383	1000.0000	1000.0000	1000.0000
0.0306	0.0699	1000.0000	1000.0000	1000.0000
0.0860	0.1480	1000.0000	1000.0000	1000.0000
0.0850	0.1135	1000.0000	1000.0000	1000.0000
0.1556	0.1654	1000.0000	1000.0000	1000.0000

Table A.7: Waiting time probabilities of whole blood donors with appointment, schedule SS_1 evaluated with the second waiting time model

0.3570	1000.0000	1.0000	1000.0000	1.0000
0.0878	1000.0000	0.2727	1000.0000	0.0885
0.2321	1000.0000	0.1427	1000.0000	0.1598
0.3010	1000.0000	0.2572	1000.0000	0.0749
0.1288	1000.0000	0.1564	1000.0000	0.0749
0.1304	1000.0000	0.1701	1000.0000	0.0943
0.1361	1000.0000	0.1407	1000.0000	0.1792
0.1013	1000.0000	0.2269	1000.0000	0.1857
0.2840	1000.0000	0.2457	1000.0000	0.0962
0.1180	1000.0000	0.2097	1000.0000	0.1322
0.1520	1000.0000	0.2853	1000.0000	0.1836
0.2824	1000.0000	0.3578	1000.0000	0.1945
0.1359	1000.0000	0.2870	1000.0000	0.2135
0.1288	1000.0000	0.1199	1000.0000	0.1816
0.0910	1000.0000	0.3159	1000.0000	0.2642
0.1064	1000.0000	0.1463	1000.0000	0.2143
0.3626	1000.0000	0.1551	1000.0000	0.2921
0.2997	1000.0000	0.2338	1000.0000	0.2564
0.2400	1000.0000	1000.0000	1000.0000	1000.0000
0.3026	1000.0000	1000.0000	1000.0000	1000.0000
0.2870	1000.0000	1000.0000	1000.0000	1000.0000
0.2921	1000.0000	1000.0000	1000.0000	1000.0000
0.1763	1000.0000	1000.0000	1000.0000	1000.0000
0.1244	1000.0000	1000.0000	1000.0000	1000.0000
0.2321	1000.0000	1000.0000	1000.0000	1000.0000
0.2061	1000.0000	1000.0000	1000.0000	1000.0000
0.1744	1000.0000	1000.0000	1000.0000	1000.0000
0.2448	1.0000	1000.0000	1000.0000	1000.0000
0.1775	0.1324	1000.0000	1000.0000	1000.0000
0.3708	0.1260	1000.0000	1000.0000	1000.0000
0.1310	0.2450	1000.0000	1000.0000	1000.0000
0.2824	0.1394	1000.0000	1000.0000	1000.0000
0.1185	0.1116	1000.0000	1000.0000	1000.0000
0.3298	0.3015	1000.0000	1000.0000	1000.0000
0.2304	0.1404	1000.0000	1000.0000	1000.0000
0.1850	0.1053	1000.0000	1000.0000	1000.0000
0.3353	0.2964	1000.0000	1000.0000	1000.0000
0.4410	0.2748	1000.0000	1000.0000	1000.0000
0.1732	0.2893	1000.0000	1000.0000	1000.0000
0.2497	0.2498	1000.0000	1000.0000	1000.0000
0.1940	0.2848	1000.0000	1000.0000	1000.0000
0.1500	0.2306	1000.0000	1000.0000	1000.0000
0.0945	0.0957	1000.0000	1000.0000	1000.0000
0.3131	0.1140	1000.0000	1000.0000	1000.0000
0.1250	0.4163	1000.0000	1000.0000	1000.0000
0.2944	0.3472	1000.0000	1000.0000	1000.0000
0.2987	0.3543	1000.0000	1000.0000	1000.0000
0.4588	0.1936	1000.0000	1000.0000	1000.0000
0.2046	0.2197	1000.0000	1000.0000	1000.0000
0.1964	0.1439	1000.0000	1000.0000	1000.0000
0.1652	0.1705	1000.0000	1000.0000	1000.0000
0.3626	0.1666	1000.0000	1000.0000	1000.0000
0.3381	0.1568	1000.0000	1000.0000	1000.0000
0.3473	0.1005	1000.0000	1000.0000	1000.0000
0.1169	0.1220	1000.0000	1000.0000	1000.0000
0.3026	0.1018	1000.0000	1000.0000	1000.0000
0.1506	0.3108	1000.0000	1000.0000	1000.0000
0.2769	0.3063	1000.0000	1000.0000	1000.0000
0.1373	0.1935	1000.0000	1000.0000	1000.0000
0.2726	0.1913	1000.0000	1000.0000	1000.0000
0.2541	0.2441	1000.0000	1000.0000	1000.0000
0.1289	0.1206	1000.0000	1000.0000	1000.0000
0.1312	0.1278	1000.0000	1000.0000	1000.0000
0.2004	0.1659	1000.0000	1000.0000	1000.0000
0.1389	0.1676	1000.0000	1000.0000	1000.0000
0.3847	0.1187	1000.0000	1000.0000	1000.0000
0.2953	0.1391	1000.0000	1000.0000	1000.0000
0.1120	0.2258	1000.0000	1000.0000	1000.0000
0.1223	0.1881	1000.0000	1000.0000	1000.0000
0.3098	0.3045	1000.0000	1000.0000	1000.0000
0.1594	0.1723	1000.0000	1000.0000	1000.0000
0.1821	0.2058	1000.0000	1000.0000	1000.0000

Table A.8: Waiting time probabilities of whole blood donors with appointment, schedule SS_1 evaluated with the second waiting time model

0.0000	1000.0000	0.0000	1000.0000	0.0000
0.1064	1000.0000	0.2275	1000.0000	0.0000
0.1336	1000.0000	0.0739	1000.0000	0.0921
0.1743	1000.0000	0.1658	1000.0000	0.0739
0.0877	1000.0000	0.1664	1000.0000	0.0739
0.1054	1000.0000	0.1181	1000.0000	0.0731
0.1586	1000.0000	0.1522	1000.0000	0.1316
0.1105	1000.0000	0.1379	1000.0000	0.0884
0.1562	1000.0000	0.0746	1000.0000	0.0385
0.0708	1000.0000	0.1249	1000.0000	0.0994
0.1306	1000.0000	0.1701	1000.0000	0.0957
0.1293	1000.0000	0.0695	1000.0000	0.0823
0.0811	1000.0000	0.1581	1000.0000	0.1201
0.0877	1000.0000	0.0441	1000.0000	0.0517
0.0538	1000.0000	0.1076	1000.0000	0.0609
0.0564	1000.0000	0.0622	1000.0000	0.0495
0.1538	1000.0000	0.0514	1000.0000	0.0762
0.1588	1000.0000	0.0566	1000.0000	0.0527
0.1597	1000.0000	1000.0000	1000.0000	1000.0000
0.1203	1000.0000	1000.0000	1000.0000	1000.0000
0.1182	1000.0000	1000.0000	1000.0000	1000.0000
0.1189	1000.0000	1000.0000	1000.0000	1000.0000
0.0597	1000.0000	1000.0000	1000.0000	1000.0000
0.0416	1000.0000	1000.0000	1000.0000	1000.0000
0.0903	1000.0000	1000.0000	1000.0000	1000.0000
0.0704	1000.0000	1000.0000	1000.0000	1000.0000
0.0533	1000.0000	1000.0000	1000.0000	1000.0000
0.0920	0.0000	1000.0000	1000.0000	1000.0000
0.0537	0.0865	1000.0000	1000.0000	1000.0000
0.1696	0.0479	1000.0000	1000.0000	1000.0000
0.1271	0.0922	1000.0000	1000.0000	1000.0000
0.1293	0.0657	1000.0000	1000.0000	1000.0000
0.0780	0.0461	1000.0000	1000.0000	1000.0000
0.1127	0.1471	1000.0000	1000.0000	1000.0000
0.0662	0.1094	1000.0000	1000.0000	1000.0000
0.0676	0.0945	1000.0000	1000.0000	1000.0000
0.1030	0.1465	1000.0000	1000.0000	1000.0000
0.1737	0.0899	1000.0000	1000.0000	1000.0000
0.0382	0.1100	1000.0000	1000.0000	1000.0000
0.0838	0.0868	1000.0000	1000.0000	1000.0000
0.0448	0.1094	1000.0000	1000.0000	1000.0000
0.0358	0.0843	1000.0000	1000.0000	1000.0000
0.0397	0.0485	1000.0000	1000.0000	1000.0000
0.1106	0.0512	1000.0000	1000.0000	1000.0000
0.2088	0.1955	1000.0000	1000.0000	1000.0000
0.1580	0.1397	1000.0000	1000.0000	1000.0000
0.1447	0.1816	1000.0000	1000.0000	1000.0000
0.1638	0.0650	1000.0000	1000.0000	1000.0000
0.0459	0.0829	1000.0000	1000.0000	1000.0000
0.0622	0.0343	1000.0000	1000.0000	1000.0000
0.0418	0.0560	1000.0000	1000.0000	1000.0000
0.1538	0.0366	1000.0000	1000.0000	1000.0000
0.1504	0.0968	1000.0000	1000.0000	1000.0000
0.1819	0.0654	1000.0000	1000.0000	1000.0000
0.0472	0.0693	1000.0000	1000.0000	1000.0000
0.1203	0.0599	1000.0000	1000.0000	1000.0000
0.0916	0.1347	1000.0000	1000.0000	1000.0000
0.1526	0.0853	1000.0000	1000.0000	1000.0000
0.0671	0.1535	1000.0000	1000.0000	1000.0000
0.0866	0.1416	1000.0000	1000.0000	1000.0000
0.1372	0.1508	1000.0000	1000.0000	1000.0000
0.0539	0.0573	1000.0000	1000.0000	1000.0000
0.0354	0.0640	1000.0000	1000.0000	1000.0000
0.1129	0.1062	1000.0000	1000.0000	1000.0000
0.0361	0.1228	1000.0000	1000.0000	1000.0000
0.0816	0.0312	1000.0000	1000.0000	1000.0000
0.0761	0.0588	1000.0000	1000.0000	1000.0000
0.0705	0.0472	1000.0000	1000.0000	1000.0000
0.0276	0.0935	1000.0000	1000.0000	1000.0000
0.1327	0.1225	1000.0000	1000.0000	1000.0000
0.0412	0.0688	1000.0000	1000.0000	1000.0000
0.0376	0.0458	1000.0000	1000.0000	1000.0000

Table A.9: Waiting time probabilities of whole blood donors with appointment, schedule SS_2 evaluated with the first waiting time model

0.5461	1000.0000	1.0000	1000.0000	1.0000
0.1906	1000.0000	0.4332	1000.0000	0.1877
0.3557	1000.0000	0.2351	1000.0000	0.2656
0.4356	1000.0000	0.3984	1000.0000	0.1548
0.2313	1000.0000	0.2968	1000.0000	0.1548
0.2444	1000.0000	0.2921	1000.0000	0.1758
0.2718	1000.0000	0.2737	1000.0000	0.3021
0.2085	1000.0000	0.3573	1000.0000	0.2881
0.4133	1000.0000	0.3317	1000.0000	0.1540
0.2076	1000.0000	0.3342	1000.0000	0.2348
0.2807	1000.0000	0.4255	1000.0000	0.2913
0.3994	1000.0000	0.1556	1000.0000	0.2918
0.2338	1000.0000	0.4217	1000.0000	0.3284
0.2313	1000.0000	0.1839	1000.0000	0.2509
0.1648	1000.0000	0.4173	1000.0000	0.3362
0.1833	1000.0000	0.2284	1000.0000	0.2783
0.4809	1000.0000	0.2265	1000.0000	0.3746
0.4283	1000.0000	0.2937	1000.0000	0.3086
0.3801	1000.0000	1000.0000	1000.0000	1000.0000
0.4128	1000.0000	1000.0000	1000.0000	1000.0000
0.3978	1000.0000	1000.0000	1000.0000	1000.0000
0.4027	1000.0000	1000.0000	1000.0000	1000.0000
0.2546	1000.0000	1000.0000	1000.0000	1000.0000
0.1867	1000.0000	1000.0000	1000.0000	1000.0000
0.3309	1000.0000	1000.0000	1000.0000	1000.0000
0.2919	1000.0000	1000.0000	1000.0000	1000.0000
0.2466	1000.0000	1000.0000	1000.0000	1000.0000
0.3437	1.0000	1000.0000	1000.0000	1000.0000
0.2500	0.2259	1000.0000	1000.0000	1000.0000
0.4941	0.1941	1000.0000	1000.0000	1000.0000
0.2503	0.3461	1000.0000	1000.0000	1000.0000
0.3994	0.2249	1000.0000	1000.0000	1000.0000
0.2137	0.1781	1000.0000	1000.0000	1000.0000
0.4325	0.4294	1000.0000	1000.0000	1000.0000
0.3106	0.2498	1000.0000	1000.0000	1000.0000
0.2699	0.2030	1000.0000	1000.0000	1000.0000
0.4317	0.4246	1000.0000	1000.0000	1000.0000
0.5448	0.3694	1000.0000	1000.0000	1000.0000
0.2280	0.3952	1000.0000	1000.0000	1000.0000
0.3424	0.3447	1000.0000	1000.0000	1000.0000
0.2554	0.3908	1000.0000	1000.0000	1000.0000
0.2036	0.3253	1000.0000	1000.0000	1000.0000
0.1539	0.1646	1000.0000	1000.0000	1000.0000
0.4166	0.1858	1000.0000	1000.0000	1000.0000
0.5735	0.5310	1000.0000	1000.0000	1000.0000
0.4232	0.4614	1000.0000	1000.0000	1000.0000
0.4212	0.4845	1000.0000	1000.0000	1000.0000
0.5561	0.2756	1000.0000	1000.0000	1000.0000
0.2662	0.3142	1000.0000	1000.0000	1000.0000
0.2757	0.1959	1000.0000	1000.0000	1000.0000
0.2253	0.2457	1000.0000	1000.0000	1000.0000
0.4809	0.2198	1000.0000	1000.0000	1000.0000
0.4583	0.2659	1000.0000	1000.0000	1000.0000
0.4787	0.1850	1000.0000	1000.0000	1000.0000
0.1845	0.2105	1000.0000	1000.0000	1000.0000
0.4128	0.1816	1000.0000	1000.0000	1000.0000
0.2561	0.4273	1000.0000	1000.0000	1000.0000
0.4102	0.3943	1000.0000	1000.0000	1000.0000
0.2240	0.3332	1000.0000	1000.0000	1000.0000
0.3651	0.3253	1000.0000	1000.0000	1000.0000
0.3820	0.3796	1000.0000	1000.0000	1000.0000
0.2033	0.1985	1000.0000	1000.0000	1000.0000
0.1835	0.2119	1000.0000	1000.0000	1000.0000
0.3114	0.2735	1000.0000	1000.0000	1000.0000
0.1915	0.2856	1000.0000	1000.0000	1000.0000
0.4602	0.1657	1000.0000	1000.0000	1000.0000
0.3784	0.2086	1000.0000	1000.0000	1000.0000
0.1923	0.2857	1000.0000	1000.0000	1000.0000
0.1633	0.2941	1000.0000	1000.0000	1000.0000
0.4294	0.4156	1000.0000	1000.0000	1000.0000
0.2192	0.2587	1000.0000	1000.0000	1000.0000
0.2239	0.2562	1000.0000	1000.0000	1000.0000

Table A.10: Waiting time probabilities of whole blood donors without appointment, schedule SS_2 evaluated with the first waiting time model

0.11

0.0000	1000.0000	0.0000	1000.0000	0.0000
0.0663	1000.0000	0.0934	1000.0000	0.0000
0.1696	1000.0000	0.0609	1000.0000	0.0719
0.1975	1000.0000	0.1140	1000.0000	0.0663
0.0726	1000.0000	0.0716	1000.0000	0.0663
0.0860	1000.0000	0.0896	1000.0000	0.0457
0.0703	1000.0000	0.0656	1000.0000	0.0500
0.0481	1000.0000	0.0970	1000.0000	0.0667
0.1829	1000.0000	0.1098	1000.0000	0.0402
0.0615	1000.0000	0.0896	1000.0000	0.0389
0.1022	1000.0000	0.1140	1000.0000	0.0719
0.1574	1000.0000	0.0496	1000.0000	0.0619
0.0668	1000.0000	0.1051	1000.0000	0.0423
0.0726	1000.0000	0.0422	1000.0000	0.0431
0.0522	1000.0000	0.1330	1000.0000	0.0944
0.0522	1000.0000	0.0524	1000.0000	0.0402
0.1696	1000.0000	0.0971	1000.0000	0.1063
0.1829	1000.0000	0.1771	1000.0000	0.1640
0.1116	1000.0000	1000.0000	1000.0000	1000.0000
0.1462	1000.0000	1000.0000	1000.0000	1000.0000
0.1462	1000.0000	1000.0000	1000.0000	1000.0000
0.1462	1000.0000	1000.0000	1000.0000	1000.0000
0.1032	1000.0000	1000.0000	1000.0000	1000.0000
0.0906	1000.0000	1000.0000	1000.0000	1000.0000
0.1267	1000.0000	1000.0000	1000.0000	1000.0000
0.1104	1000.0000	1000.0000	1000.0000	1000.0000
0.0966	1000.0000	1000.0000	1000.0000	1000.0000
0.1267	0.0000	1000.0000	1000.0000	1000.0000
0.0966	0.0331	1000.0000	1000.0000	1000.0000
0.1782	0.0443	1000.0000	1000.0000	1000.0000
0.0529	0.0646	1000.0000	1000.0000	1000.0000
0.1574	0.0554	1000.0000	1000.0000	1000.0000
0.0668	0.0443	1000.0000	1000.0000	1000.0000
0.1361	0.0963	1000.0000	1000.0000	1000.0000
0.1032	0.0428	1000.0000	1000.0000	1000.0000
0.1104	0.0393	1000.0000	1000.0000	1000.0000
0.1267	0.0963	1000.0000	1000.0000	1000.0000
0.2182	0.1211	1000.0000	1000.0000	1000.0000
0.0799	0.1383	1000.0000	1000.0000	1000.0000
0.1182	0.1211	1000.0000	1000.0000	1000.0000
0.0850	0.1383	1000.0000	1000.0000	1000.0000
0.0799	0.1211	1000.0000	1000.0000	1000.0000
0.0412	0.0477	1000.0000	1000.0000	1000.0000
0.1361	0.0477	1000.0000	1000.0000	1000.0000
0.2523	0.2877	1000.0000	1000.0000	1000.0000
0.1829	0.1586	1000.0000	1000.0000	1000.0000
0.1696	0.1861	1000.0000	1000.0000	1000.0000
0.2331	0.1065	1000.0000	1000.0000	1000.0000
0.0850	0.1211	1000.0000	1000.0000	1000.0000
0.1032	0.0789	1000.0000	1000.0000	1000.0000
0.0850	0.1000	1000.0000	1000.0000	1000.0000
0.1696	0.0789	1000.0000	1000.0000	1000.0000
0.1696	0.0756	1000.0000	1000.0000	1000.0000
0.1975	0.0598	1000.0000	1000.0000	1000.0000
0.0446	0.0598	1000.0000	1000.0000	1000.0000
0.1462	0.0554	1000.0000	1000.0000	1000.0000
0.0726	0.1586	1000.0000	1000.0000	1000.0000
0.1022	0.1135	1000.0000	1000.0000	1000.0000
0.0566	0.1134	1000.0000	1000.0000	1000.0000
0.1182	0.1044	1000.0000	1000.0000	1000.0000
0.0937	0.1044	1000.0000	1000.0000	1000.0000
0.0482	0.0514	1000.0000	1000.0000	1000.0000
0.0354	0.0554	1000.0000	1000.0000	1000.0000
0.0399	0.0393	1000.0000	1000.0000	1000.0000
0.0354	0.0468	1000.0000	1000.0000	1000.0000
0.1032	0.0333	1000.0000	1000.0000	1000.0000
0.0522	0.0217	1000.0000	1000.0000	1000.0000
0.0277	0.0383	1000.0000	1000.0000	1000.0000
0.0306	0.0699	1000.0000	1000.0000	1000.0000
0.0860	0.1480	1000.0000	1000.0000	1000.0000
0.0850	0.1135	1000.0000	1000.0000	1000.0000
0.1556	0.1654	1000.0000	1000.0000	1000.0000

Table A.11: Average waiting time probability of whole blood donors with appointment

0.3570	1000.0000	1.0000	1000.0000	1.0000
0.1196	1000.0000	0.2727	1000.0000	0.0885
0.2321	1000.0000	0.1427	1000.0000	0.1598
0.3010	1000.0000	0.2572	1000.0000	0.1466
0.1288	1000.0000	0.1564	1000.0000	0.1466
0.1304	1000.0000	0.1701	1000.0000	0.1383
0.1361	1000.0000	0.1407	1000.0000	0.1792
0.1013	1000.0000	0.2269	1000.0000	0.1857
0.2840	1000.0000	0.2457	1000.0000	0.0962
0.1180	1000.0000	0.2097	1000.0000	0.1322
0.1520	1000.0000	0.2853	1000.0000	0.1836
0.2824	1000.0000	0.1251	1000.0000	0.1945
0.1359	1000.0000	0.2870	1000.0000	0.2135
0.1288	1000.0000	0.1199	1000.0000	0.1816
0.0910	1000.0000	0.3159	1000.0000	0.2642
0.1064	1000.0000	0.1463	1000.0000	0.2143
0.3626	1000.0000	0.1551	1000.0000	0.2921
0.2997	1000.0000	0.2338	1000.0000	0.2564
0.2400	1000.0000	1000.0000	1000.0000	1000.0000
0.3026	1000.0000	1000.0000	1000.0000	1000.0000
0.2870	1000.0000	1000.0000	1000.0000	1000.0000
0.2921	1000.0000	1000.0000	1000.0000	1000.0000
0.1763	1000.0000	1000.0000	1000.0000	1000.0000
0.1244	1000.0000	1000.0000	1000.0000	1000.0000
0.2321	1000.0000	1000.0000	1000.0000	1000.0000
0.2061	1000.0000	1000.0000	1000.0000	1000.0000
0.1744	1000.0000	1000.0000	1000.0000	1000.0000
0.2448	1.0000	1000.0000	1000.0000	1000.0000
0.1775	0.1324	1000.0000	1000.0000	1000.0000
0.3614	0.1260	1000.0000	1000.0000	1000.0000
0.1310	0.2450	1000.0000	1000.0000	1000.0000
0.2824	0.1394	1000.0000	1000.0000	1000.0000
0.1185	0.1116	1000.0000	1000.0000	1000.0000
0.3298	0.3015	1000.0000	1000.0000	1000.0000
0.2304	0.1404	1000.0000	1000.0000	1000.0000
0.1850	0.1053	1000.0000	1000.0000	1000.0000
0.3353	0.2964	1000.0000	1000.0000	1000.0000
0.3446	0.2748	1000.0000	1000.0000	1000.0000
0.1732	0.2893	1000.0000	1000.0000	1000.0000
0.2497	0.2498	1000.0000	1000.0000	1000.0000
0.1940	0.2848	1000.0000	1000.0000	1000.0000
0.1500	0.2306	1000.0000	1000.0000	1000.0000
0.0945	0.0957	1000.0000	1000.0000	1000.0000
0.3131	0.1140	1000.0000	1000.0000	1000.0000
0.3726	0.3857	1000.0000	1000.0000	1000.0000
0.2944	0.3472	1000.0000	1000.0000	1000.0000
0.2987	0.3363	1000.0000	1000.0000	1000.0000
0.4033	0.1936	1000.0000	1000.0000	1000.0000
0.2046	0.2197	1000.0000	1000.0000	1000.0000
0.1964	0.1439	1000.0000	1000.0000	1000.0000
0.1652	0.1705	1000.0000	1000.0000	1000.0000
0.3626	0.1666	1000.0000	1000.0000	1000.0000
0.3381	0.1568	1000.0000	1000.0000	1000.0000
0.3473	0.1005	1000.0000	1000.0000	1000.0000
0.1169	0.1220	1000.0000	1000.0000	1000.0000
0.3026	0.1018	1000.0000	1000.0000	1000.0000
0.1506	0.3108	1000.0000	1000.0000	1000.0000
0.2769	0.3063	1000.0000	1000.0000	1000.0000
0.1373	0.1935	1000.0000	1000.0000	1000.0000
0.2726	0.1913	1000.0000	1000.0000	1000.0000
0.2541	0.2441	1000.0000	1000.0000	1000.0000
0.1289	0.1206	1000.0000	1000.0000	1000.0000
0.1312	0.1278	1000.0000	1000.0000	1000.0000
0.2004	0.1659	1000.0000	1000.0000	1000.0000
0.1389	0.1676	1000.0000	1000.0000	1000.0000
0.3847	0.1187	1000.0000	1000.0000	1000.0000
0.2953	0.1391	1000.0000	1000.0000	1000.0000
0.1120	0.2258	1000.0000	1000.0000	1000.0000
0.1223	0.1881	1000.0000	1000.0000	1000.0000
0.3098	0.3045	1000.0000	1000.0000	1000.0000
0.1594	0.1723	1000.0000	1000.0000	1000.0000
0.1821	0.2058	1000.0000	1000.0000	1000.0000

Table A.12: Average waiting time probability of whole blood donors without appointment

[illegible]Table A.13: New Penalty function schedule SS_3

0.0000	1000.0000	0.0000	1000.0000	0.0000
0.0481	1000.0000	0.0934	1000.0000	0.0000
0.1696	1000.0000	0.0609	1000.0000	0.0719
0.1975	1000.0000	0.1140	1000.0000	0.1581
0.0726	1000.0000	0.0716	1000.0000	0.0329
0.0860	1000.0000	0.0896	1000.0000	0.0303
0.0703	1000.0000	0.0656	1000.0000	0.0500
0.0481	1000.0000	0.0970	1000.0000	0.0667
0.1829	1000.0000	0.1098	1000.0000	0.0402
0.0615	1000.0000	0.0896	1000.0000	0.0389
0.1022	1000.0000	0.1140	1000.0000	0.0719
0.1574	1000.0000	0.0303	1000.0000	0.0619
0.0668	1000.0000	0.1051	1000.0000	0.0423
0.0726	1000.0000	0.0422	1000.0000	0.0431
0.0522	1000.0000	0.1330	1000.0000	0.0944
0.0522	1000.0000	0.0524	1000.0000	0.0402
0.1696	1000.0000	0.0971	1000.0000	0.1063
0.1829	1000.0000	0.1771	1000.0000	0.1640
0.1116	1000.0000	1000.0000	1000.0000	1000.0000
0.1462	1000.0000	1000.0000	1000.0000	1000.0000
0.1462	1000.0000	1000.0000	1000.0000	1000.0000
0.1462	1000.0000	1000.0000	1000.0000	1000.0000
0.1032	1000.0000	1000.0000	1000.0000	1000.0000
0.0906	1000.0000	1000.0000	1000.0000	1000.0000
0.1267	1000.0000	1000.0000	1000.0000	1000.0000
0.1104	1000.0000	1000.0000	1000.0000	1000.0000
0.0966	1000.0000	1000.0000	1000.0000	1000.0000
0.1267	0.0000	1000.0000	1000.0000	1000.0000
0.0966	0.0331	1000.0000	1000.0000	1000.0000
0.1829	0.0443	1000.0000	1000.0000	1000.0000
0.0529	0.0646	1000.0000	1000.0000	1000.0000
0.1574	0.0554	1000.0000	1000.0000	1000.0000
0.0668	0.0443	1000.0000	1000.0000	1000.0000
0.1361	0.0963	1000.0000	1000.0000	1000.0000
0.1032	0.0428	1000.0000	1000.0000	1000.0000
0.1104	0.0393	1000.0000	1000.0000	1000.0000
0.1267	0.0963	1000.0000	1000.0000	1000.0000
0.2812	0.1211	1000.0000	1000.0000	1000.0000
0.0799	0.1383	1000.0000	1000.0000	1000.0000
0.1182	0.1211	1000.0000	1000.0000	1000.0000
0.0850	0.1383	1000.0000	1000.0000	1000.0000
0.0799	0.1211	1000.0000	1000.0000	1000.0000
0.0412	0.0477	1000.0000	1000.0000	1000.0000
0.1361	0.0477	1000.0000	1000.0000	1000.0000
0.0799	0.3109	1000.0000	1000.0000	1000.0000
0.1829	0.1586	1000.0000	1000.0000	1000.0000
0.1696	0.1962	1000.0000	1000.0000	1000.0000
0.2664	0.1065	1000.0000	1000.0000	1000.0000
0.0850	0.1211	1000.0000	1000.0000	1000.0000
0.1032	0.0789	1000.0000	1000.0000	1000.0000
0.0850	0.1000	1000.0000	1000.0000	1000.0000
0.1696	0.0789	1000.0000	1000.0000	1000.0000
0.1696	0.0756	1000.0000	1000.0000	1000.0000
0.1975	0.0598	1000.0000	1000.0000	1000.0000
0.0446	0.0598	1000.0000	1000.0000	1000.0000
0.1462	0.0554	1000.0000	1000.0000	1000.0000
0.0726	0.1586	1000.0000	1000.0000	1000.0000
0.1022	0.1135	1000.0000	1000.0000	1000.0000
0.0566	0.1134	1000.0000	1000.0000	1000.0000
0.1182	0.1044	1000.0000	1000.0000	1000.0000
0.0937	0.1044	1000.0000	1000.0000	1000.0000
0.0482	0.0514	1000.0000	1000.0000	1000.0000
0.0354	0.0554	1000.0000	1000.0000	1000.0000
0.0399	0.0393	1000.0000	1000.0000	1000.0000
0.0354	0.0468	1000.0000	1000.0000	1000.0000
0.1032	0.0333	1000.0000	1000.0000	1000.0000
0.0522	0.0217	1000.0000	1000.0000	1000.0000
0.0277	0.0383	1000.0000	1000.0000	1000.0000
0.0306	0.0699	1000.0000	1000.0000	1000.0000
0.0860	0.1480	1000.0000	1000.0000	1000.0000
0.0850	0.1135	1000.0000	1000.0000	1000.0000
0.1556	0.1654	1000.0000	1000.0000	1000.0000

Table A.14: Waiting time whole blood donors with appointment schedule SS_3

0.3570	1000.0000	1.0000	1000.0000	1.0000
0.0878	1000.0000	0.2727	1000.0000	0.0885
0.2321	1000.0000	0.1427	1000.0000	0.1598
0.3010	1000.0000	0.2572	1000.0000	0.3437
0.1288	1000.0000	0.1564	1000.0000	0.0749
0.1304	1000.0000	0.1701	1000.0000	0.0943
0.1361	1000.0000	0.1407	1000.0000	0.1792
0.1013	1000.0000	0.2269	1000.0000	0.1857
0.2840	1000.0000	0.2457	1000.0000	0.0962
0.1180	1000.0000	0.2097	1000.0000	0.1322
0.1520	1000.0000	0.2853	1000.0000	0.1836
0.2824	1000.0000	0.0785	1000.0000	0.1945
0.1359	1000.0000	0.2870	1000.0000	0.2135
0.1288	1000.0000	0.1199	1000.0000	0.1816
0.0910	1000.0000	0.3159	1000.0000	0.2642
0.1064	1000.0000	0.1463	1000.0000	0.2143
0.3626	1000.0000	0.1551	1000.0000	0.2921
0.2997	1000.0000	0.2338	1000.0000	0.2564
0.2400	1000.0000	1000.0000	1000.0000	1000.0000
0.3026	1000.0000	1000.0000	1000.0000	1000.0000
0.2870	1000.0000	1000.0000	1000.0000	1000.0000
0.2921	1000.0000	1000.0000	1000.0000	1000.0000
0.1763	1000.0000	1000.0000	1000.0000	1000.0000
0.1244	1000.0000	1000.0000	1000.0000	1000.0000
0.2321	1000.0000	1000.0000	1000.0000	1000.0000
0.2061	1000.0000	1000.0000	1000.0000	1000.0000
0.1744	1000.0000	1000.0000	1000.0000	1000.0000
0.2448	1.0000	1000.0000	1000.0000	1000.0000
0.1775	0.1324	1000.0000	1000.0000	1000.0000
0.3708	0.1260	1000.0000	1000.0000	1000.0000
0.1310	0.2450	1000.0000	1000.0000	1000.0000
0.2824	0.1394	1000.0000	1000.0000	1000.0000
0.1185	0.1116	1000.0000	1000.0000	1000.0000
0.3298	0.3015	1000.0000	1000.0000	1000.0000
0.2304	0.1404	1000.0000	1000.0000	1000.0000
0.1850	0.1053	1000.0000	1000.0000	1000.0000
0.3353	0.2964	1000.0000	1000.0000	1000.0000
0.4410	0.2748	1000.0000	1000.0000	1000.0000
0.1732	0.2893	1000.0000	1000.0000	1000.0000
0.2497	0.2498	1000.0000	1000.0000	1000.0000
0.1940	0.2848	1000.0000	1000.0000	1000.0000
0.1500	0.2306	1000.0000	1000.0000	1000.0000
0.0945	0.0957	1000.0000	1000.0000	1000.0000
0.3131	0.1140	1000.0000	1000.0000	1000.0000
0.1250	0.4163	1000.0000	1000.0000	1000.0000
0.2944	0.3472	1000.0000	1000.0000	1000.0000
0.2987	0.3543	1000.0000	1000.0000	1000.0000
0.4588	0.1936	1000.0000	1000.0000	1000.0000
0.2046	0.2197	1000.0000	1000.0000	1000.0000
0.1964	0.1439	1000.0000	1000.0000	1000.0000
0.1652	0.1705	1000.0000	1000.0000	1000.0000
0.3626	0.1666	1000.0000	1000.0000	1000.0000
0.3381	0.1568	1000.0000	1000.0000	1000.0000
0.3473	0.1005	1000.0000	1000.0000	1000.0000
0.1169	0.1220	1000.0000	1000.0000	1000.0000
0.3026	0.1018	1000.0000	1000.0000	1000.0000
0.1506	0.3108	1000.0000	1000.0000	1000.0000
0.2769	0.3063	1000.0000	1000.0000	1000.0000
0.1373	0.1935	1000.0000	1000.0000	1000.0000
0.2726	0.1913	1000.0000	1000.0000	1000.0000
0.2541	0.2441	1000.0000	1000.0000	1000.0000
0.1289	0.1206	1000.0000	1000.0000	1000.0000
0.1312	0.1278	1000.0000	1000.0000	1000.0000
0.2004	0.1659	1000.0000	1000.0000	1000.0000
0.1389	0.1676	1000.0000	1000.0000	1000.0000
0.3847	0.1187	1000.0000	1000.0000	1000.0000
0.2953	0.1391	1000.0000	1000.0000	1000.0000
0.1120	0.2258	1000.0000	1000.0000	1000.0000
0.1223	0.1881	1000.0000	1000.0000	1000.0000
0.3098	0.3045	1000.0000	1000.0000	1000.0000
0.1594	0.1723	1000.0000	1000.0000	1000.0000
0.1821	0.2058	1000.0000	1000.0000	1000.0000

Table A.15: Waiting time whole blood donors without appointment schedule SS_3

Appendix B

Arrival patterns analysis fixed locations

In section 4.1 the arrival patterns for whole blood donors are analysed. The matrix B is used to compare arrival patterns of days of the same type with the same session. To decide if arrival patterns are similar, a percentage is calculated with calculated with (1b). The matrices G1 and G2 are used to compare arrival patterns of days that or not of the same type. To decide if arrival patterns are similar, a percentage is calculated with calculated with (2c) and (2d).

Per location the B matrices and the G1&G2 matrices are shown. For each location first the B matrices are shown, they are put in one table. In this table the B matrices are ordered per day type. So the first row of the table indicates for which day type the arrival patterns are compared. In the rows below the day type the matrix B for that day type is shown. The last row give the percentage belonging to the above matrix B calculated with (1b). To have columns of the same length, the tables are filled up with "-".

After the B matrices are shown in one table the G1&G2 matrices are shown. The first row gives the day type. In the rows below the day type the matrix G1, respectively the matrix G2 are shown. The last row gives the percentage belonging to the above matrix G1 calculated with (2c), respectively the percentage belonging to the above matrix G2 calculated with (2d). To have columns of the same length, the tables are filled up with "-".

Analyse arrival patterns

Amsterdam Plesmanlaan

1	2	3	4	5
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0192	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0196
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0385	0.0000	0.0000
0.0000	0.0000	0.0192	0.0213	0.0196
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0426	0.0000
0.0000	0.0000	0.0385	0.0000	0.0000
0.0000	0.0000	0.0769	0.0000	0.0784
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0204	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0192	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0196
0.0204	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0196
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0392
0.0000	0.0392	0.0385	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0196	0.0000	0.0000	0.0784
0.0000	0.0196	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0784	0.0000	0.0213	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0588	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0769	0.0000	0.0392
0.0000	0.0000	0.0000	0.0000	0.0392
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0196	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0392
0.0000	0.0000	0.0192	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0392	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	-	0.0980
0.0000	0.0000	0.0000	-	0.0000
-	0.0000	0.0000	-	0.1569
-	0.0392	0.0769	-	0.0588
-	-	0.0000	-	-
0	0	0	0	0.0196078431372549

1	2
0.4314	0.1020
0.5098	0.9184
0.6275	0.9796
0.1176	0.3469
0.2157	0.7551
0.1176	0.0000
0.2941	0.1020
0.2549	0.8367
0.2745	0.0612
0.4510	0.0000
0.6471	0.0000
0.2941	0.8776
0.2745	0.0000
0.4510	0.3265
0.5098	0.8571
0.3137	0.0000
0.3137	0.0204
0.6078	0.5306
0.4314	0.0408
0.4118	0.0000
0.4118	0.0204
0.3922	0.9796
0.4706	0.0204
0.3333	0.0000
0.7647	0.5306
0.2549	0.0000
0.5490	0.2449
0.5098	0.6327
0.6078	0.9796
0.4118	0.6122
0.3922	0.1837
0.3137	0.0000
0.2941	0.5306
0.5882	0.4082
0.3137	0.9796
0.5098	0.9184
0.2353	0.1837
0.5098	0.4490
0.3333	0.0204
0.4706	0.9592
0.5294	0.0204
0.1176	0.8163
0.4118	0.2449
0.2745	0.0204
0.2745	0.5102
0.5882	0.0000
0.4510	0.9388
0.5098	0.8367
0.5098	0.4490
-	0.4490
-	1.0000
-	-
1.0000	0.6471

1	3
0.1262	0.0000
0.2136	0.0000
0.3204	0.1020
0.0583	0.0000
0.0777	0.0204
0.0583	0.0000
0.1068	0.9796
0.0971	0.8776
0.1068	0.9796
0.1553	0.1633
0.3107	0.9388
0.1165	0.1429
0.1068	0.0000
0.2039	0.0000
0.1845	0.7755
0.1165	0.3265
0.1262	0.0612
0.2524	0.1837
0.1456	0.0816
0.1456	0.8980
0.1553	0.1224
0.1650	0.1429
0.1650	0.0612
0.1262	0.1429
0.3883	0.9184
0.1068	0.9796
0.2427	0.3469
0.1748	0.4694
0.2816	0.4490
0.1456	0.3061
0.1165	0.9796
0.1165	0.1837
0.1068	0.2041
0.3107	0.5306
0.1262	0.0204
0.1845	0.3878
0.0971	0.0204
0.1845	0.0204
0.1359	0.7551
0.1650	0.0408
0.2136	0.0204
0.0680	0.2245
0.1845	0.2857
0.1068	0.9796
0.1068	0.0204
0.2718	0.1224
0.1942	0.0000
0.2039	0.0000
0.1942	0.1633
-	0.0000
-	1.0000
-	0.5306
0.8776	0.6346

2	3
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0097
0.0000	0.0000
0.0000	0.0000
0.0000	0.0194
0.0000	0.0194
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0577	0.0097
0.0000	0.0194
0.0000	0.0194
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0388
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0192	0.0388
0.0000	0.0000
0.0000	0.0000
0.0192	0.0000
0.0000	0.0000
0.0000	0.0000
0.1154	0.0000
0.0000	0.0000
0.0000	0.0000
0.0769	0.0000
0.0000	0.0000
0.0000	0.0194
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0192	0.0000
0.0000	0.0000
0.0000	0.0000
0.0192	0.0000
0.0000	0.0000
0.1154	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0097
0.0000	0.0097
0.0385	0.0291
-	0.0000
0.0392	0.0000

2	4
0.4646	0.0733
0.3333	0.3267
0.2222	0.3333
0.4545	0.2667
0.3737	0.2267
0.4343	0.3267
0.4343	0.1733
0.4040	0.3133
0.4646	0.3333
0.4545	0.3267
0.4343	0.3200
0.3333	0.1867
0.4545	0.2733
0.4242	0.3333
0.4242	0.3200
0.4444	0.3333
0.4545	0.3333
0.4343	0.3333
0.4444	0.2133
0.4444	0.3000
0.4343	0.2800
0.3333	0.3333
0.4444	0.3267
0.4646	0.3267
0.3434	0.3267
0.4444	0.0933
0.4444	0.3267
0.3434	0.3267
0.2727	0.3333
0.3838	0.3333
0.4343	0.2867
0.4646	0.2800
0.4242	0.1733
0.4141	0.3200
0.2121	0.3200
0.2828	0.2067
0.4646	0.3067
0.3939	0.2733
0.3737	0.2267
0.4242	0.3333
0.4646	0.3267
0.3535	0.3267
0.3838	0.2667
0.4646	0.3333
0.4444	0.3200
0.4646	0.3333
0.3131	0.3267
0.3232	-
0.3838	-
0.4747	-
0.4242	-
-	-
1.0000	0.9574

3	4
0.9787	0.1717
0.8936	0.4646
0.9787	0.4848
0.9787	0.4242
0.9787	0.4040
0.8936	0.4545
0.0213	0.3131
0.5745	0.4747
0.5957	0.4848
0.8085	0.4646
0.4043	0.4646
0.9574	0.2727
0.9574	0.4343
0.9787	0.4949
0.8936	0.4747
0.9362	0.4949
0.9787	0.5051
0.9574	0.4949
0.9787	0.3838
0.8511	0.4343
0.9149	0.4141
0.9787	0.4949
0.9787	0.4646
0.9787	0.4949
0.5319	0.4545
0.0000	0.2424
0.9149	0.4848
0.8723	0.4646
0.9574	0.4949
0.8936	0.4949
0.3404	0.4343
0.8723	0.4242
0.8298	0.2727
0.8085	0.4545
0.8936	0.4343
0.9362	0.3636
0.9787	0.4545
0.7660	0.3939
0.3191	0.4343
0.9362	0.4747
0.9574	0.4848
0.9574	0.4848
0.9574	0.4040
0.8085	0.4848
0.9574	0.4545
0.9149	0.4848
0.9787	0.4848
0.9787	-
0.9787	-
1.0000	-
0.5319	-
0.9149	-
0.9615	1.0000

3	5
0.5102	0.3267
0.5102	0.3267
0.5102	0.3333
0.5102	0.3267
0.5102	0.3267
0.5102	0.3333
0.2143	0.3333
0.5102	0.3200
0.5102	0.3267
0.5102	0.3267
0.5102	0.3267
0.5102	0.3333
0.5102	0.3267
0.5102	0.3333
0.5102	0.3267
0.5102	0.3333
0.5102	0.3267
0.5102	0.3333
0.5102	0.3333
0.5102	0.3333
0.5102	0.3267
0.5102	0.3267
0.5102	0.3267
0.5102	0.3200
0.5102	0.3333
0.0000	0.3333
0.5102	0.3267
0.5102	0.3333
0.5102	0.3267
0.5102	0.3333
0.5102	0.3267
0.5102	0.3333
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0.5102	0.3333
0.5102	0.3333
0.5102	0.3267
0.5102	0.3267
0.5102	0.3267
0.5102	0.3267
0.5102	0.3267
0.5102	0.3333
0.5102	0.3333
0.5102	0.3267
0.5102	0.3267
0.5102	0.3333
0.5102	0.3267
0.5102	0.3333
0.5102	0.3333
0.5204	-
0.9808	1.0000

4	5
0.3137	0.3673
0.8039	0.2347
0.9216	0.4388
0.6471	0.4490
0.5490	0.2449
0.8235	0.4592
0.4118	0.4592
0.8235	0.4694
0.8627	0.4490
0.8039	0.4694
0.7647	0.1735
0.3922	0.2755
0.6667	0.4286
0.9412	0.4694
0.8039	0.2857
0.9608	0.3571
0.9412	0.4082
0.8627	0.3469
0.5098	0.4592
0.7451	0.3878
0.6863	0.3673
0.9216	0.0102
0.7843	0.3673
0.8824	0.2347
0.7451	0.2245
0.2549	0.4592
0.8431	0.2245
0.8235	0.1122
0.7647	0.4184
0.9608	0.4388
0.6863	0.4184
0.6667	0.3571
0.3529	0.4694
0.8039	0.1122
0.7059	0.4694
0.4902	0.4184
0.7255	0.0102
0.6078	0.1633
0.5686	0.3776
0.8039	0.4184
0.8627	0.4490
0.8627	0.4694
0.6275	0.4694
0.9020	0.4388
0.7647	0.4592
0.8627	0.3163
0.8824	0.1020
-	0.0612
-	0.4694
-	0.4796
-	0.4796
-	-
1.0000	0.9412

Amsterdam Valkenburgerstraat

1	2	3	4	5
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
-	0.0000	0.0192	0.0000	0.0000
-	0.0000	0.0192	0.0000	0.0000
-	0.0000	0.0000	0.0204	0.0000
-	0.0000	0.0000	0.0000	0.0000
-	0.0000	0.0192	0.0204	0.0000
-	0.0000	0.0000	0.0000	0.0000
-	0.0000	0.0000	0.0000	0.0000
-	0.0000	0.0192	0.0000	0.0000
-	0.0000	0.0192	0.0000	0.0000
-	0.0000	0.0192	0.0000	0.0000
-	0.0000	0.0000	0.0000	0.0000
-	0.0000	0.0000	0.0000	0.0000
-	0.0000	0.0000	0.0000	0.0000
-	0.0000	0.0385	0.0204	0.0000
-	0.0000	0.0000	0.0000	0.0000
-	0.0000	0.1538	0.0000	0.0000
-	0.0000	0.0769	0.0000	0.0000
-	0.0000	0.3654	0.0000	0.0000
-	0.0000	0.0000	0.0000	0.0000
-	0.0000	0.0000	0.0000	0.0000
-	0.0000	0.0192	0.0204	0.0000
-	0.0000	0.0385	0.0000	0.0000
-	0.0000	0.0000	0.0000	0.0000
-	0.0000	0.0192	0.0000	0.0000
-	0.0196	0.1538	0.0000	0.0000
-	0.0000	0.0385	0.0000	0.0000
-	0.0000	0.0000	0.0000	0.0000
-	0.0000	0.0000	0.0000	0.0000
-	0.0000	0.0192	0.0000	0.0000
-	0.0000	0.0000	0.0000	0.0000
-	0.0000	0.0192	0.0204	0.0000
-	0.0000	0.0000	0.0000	0.0000
-	0.0000	0.0000	0.0204	0.0000
-	0.0000	0.0000	0.0000	0.0000
-	0.0000	0.0000	0.0000	0.0000
-	0.0000	0.0385	0.0204	0.0000
-	0.0196	0.0385	0.0000	0.0000
-	0.0000	0.0192	0.0000	0.0000
-	0.0000	0.0000	0.0000	0.0000
-	0.0000	0.0385	0.0000	0.0000
-	0.0000	0.0000	0.0000	0.0000
-	0.0000	0.0192	0.0000	0.0000
-	0.0000	0.0192	0.0204	0.0000
-	0.0000	0.0000	0.0000	0.0000
-	0.0000	0.0577	0.0000	0.0000
-	0.0000	0.0000	0.1633	0.0000
-	0.0000	0.0192	-	0.0000
-	0.0000	0.0385	-	0.0000
-	-	0.0385	-	-
0	0	0.0576923076923077	0.0204081632653061	0

2	3
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0192	0.0000
0.0000	0.0000
0.0000	0.0000
0.0192	0.0000
0.0192	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0192	0.0000
0.0000	0.0000
0.0192	0.0097
0.0000	0.0000
0.0385	0.0583
0.0000	0.0097
0.0000	0.1262
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0097
0.0385	0.0000
0.0192	0.0000
0.0577	0.0388
0.0000	0.0000
0.0192	0.0000
0.0385	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0192	0.0000
0.0000	0.0000
0.0000	0.0000
0.0385	0.0000
0.0192	0.0000
0.0000	0.0000
0.0192	0.0000
0.0192	0.0000
0.0000	0.0000
0.0385	0.0000
0.0000	0.0000
0.0192	0.0000
0.0000	0.0000
0.0000	0.0000
0.0192	0.0000
0.0192	0.0000
-	0.0097
0.0000	0.0192

2	4
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0132
0.0000	0.0000
0.0000	0.0000
0.0000	0.0066
0.0000	0.0000
0.0000	0.0000
0.0000	0.0066
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0066
0.0000	0.0000
0.0099	0.0000
0.0000	0.0000
0.0396	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0066
0.0000	0.0000
0.0000	0.0000
0.0198	0.0000
0.0099	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0132
0.0000	-
0.0000	-
-	-
0.0000	0.0000

3	4
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0198
0.0000	0.0000
0.0000	0.0396
0.0000	0.0099
0.0000	0.0000
0.0000	0.0198
0.0000	0.0000
0.0000	0.0000
0.0000	0.0396
0.0000	0.0198
0.0000	0.0000
0.0000	0.0099
0.0000	0.0000
0.2041	0.0099
0.0612	0.0198
0.2449	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0099
0.0204	0.0000
0.0000	0.0000
0.0000	0.0000
0.0816	0.0099
0.0204	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0198
0.0000	0.0099
0.0000	0.0297
0.0000	0.0000
0.0000	0.0000
0.0000	0.0099
0.0000	0.0099
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0198
0.0000	0.0099
0.0000	0.0099
0.0408	0.0099
0.0000	0.0396
0.0000	-
0.0408	-
0.0612	-
0.0385	0.0000

Alkmaar

1	2	3	4
0.0408	0.0588	0.0000	0.0000
0.0000	0.0000	0.0192	0.0204
0.0204	0.0000	0.0000	0.0204
0.0000	0.0196	0.0000	0.0204
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0408
0.0000	0.0588	0.0769	0.0000
0.0000	0.0196	0.0192	0.1837
0.0204	0.0196	0.0000	0.0408
0.0204	0.0000	0.0000	0.0000
0.0000	0.1569	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0612	0.0196	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0204
0.0000	0.0000	0.0000	0.0000
0.0000	0.0588	0.0000	0.0408
0.0000	0.0392	0.0000	0.0204
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0769	0.0000
0.0000	0.0196	0.0000	0.0204
0.0000	0.0000	0.0192	0.0000
0.0204	0.0588	0.0192	0.0000
0.0000	0.0784	0.0000	0.0000
0.0000	0.0196	0.0000	0.0000
0.0204	0.0196	0.0000	0.0000
0.0000	0.2745	0.0000	0.0000
0.0000	0.0000	0.0000	0.0204
0.0408	0.0000	0.0000	0.0204
0.0000	0.0000	0.0000	0.0204
0.0000	0.0000	0.0000	0.0000
0.0000	0.0392	0.0000	0.0204
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0385	0.2653
0.0000	0.0392	0.0000	0.0000
0.0000	0.0196	0.0000	0.0816
0.0000	0.0000	0.0000	0.0000
0.0000	0.0196	0.0000	0.0000
0.0000	0.0196	0.0577	0.0000
0.0000	0.0000	0.0000	0.0408
0.0000	0.0196	0.0192	0.0000
0.1429	0.0196	0.0000	0.0000
0.0000	0.0196	0.0000	0.0612
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0204
0.0000	0.0000	0.0000	0.0204
0.0612	0.0196	0.0000	0.0204
-	0.0196	0.0385	-
-	0.0588	0.0000	-
-	-	0.0000	-
0.0204081632653061	0.0392156862745098	0	0.0408163265306122

1	2
0.0196	0.0000
0.0000	0.0000
0.0196	0.0000
0.0588	0.0204
0.0000	0.0000
0.0000	0.0000
0.0588	0.0000
0.0000	0.0000
0.0392	0.0000
0.0196	0.0000
0.0000	0.1429
0.0000	0.0000
0.1176	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0816
0.0000	0.0408
0.0000	0.0000
0.0000	0.0000
0.0000	0.0204
0.0196	0.0000
0.0196	0.0816
0.0000	0.0816
0.0000	0.0000
0.0196	0.0000
0.0000	0.1429
0.0000	0.0000
0.0392	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0204
0.0000	0.0000
0.0000	0.0000
0.0196	0.0000
0.0196	0.0000
0.0000	0.0000
0.0196	0.0000
0.0000	0.0000
0.0000	0.0408
0.1961	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0196	0.0000
-	0.0204
-	0.0408
-	-
0.0408	0.0392

1	3
0.4563	0.1020
0.4757	0.5918
0.4854	0.4082
0.0000	0.6939
0.4757	0.5510
0.4660	0.3061
0.0291	0.7959
0.4757	0.6122
0.4854	0.4694
0.4660	0.5102
0.4563	0.4898
0.0388	0.3061
0.0000	0.5510
0.3010	0.4490
0.3398	0.5714
0.4757	0.6939
0.0388	0.6939
0.0583	0.0612
0.1748	0.3878
0.0097	0.5714
0.1942	0.6122
0.3204	0.8571
0.2816	0.5918
0.0680	0.5918
0.0000	0.2857
0.3107	0.2449
0.0291	0.6939
0.4854	0.5102
0.2330	0.4490
0.2913	0.5510
0.4951	0.2653
0.0000	0.8776
0.3689	0.6531
0.4854	0.3673
0.0680	0.3061
0.2330	0.3061
0.3107	0.3061
0.2816	0.4082
0.1942	0.3265
0.0388	0.5510
0.0388	0.3673
0.2136	0.2449
0.4078	0.6531
0.0000	0.5714
0.1650	0.4286
0.0777	0.6735
0.0388	0.3878
0.1262	0.3878
0.4951	0.4898
-	0.6122
-	0.3469
-	0.4082
0.6531	0.9808

1	4
0.0066	0.0000
0.0000	0.0000
0.0000	0.0816
0.0197	0.0000
0.0000	0.0000
0.0000	0.0000
0.0197	0.0204
0.0000	0.3061
0.0066	0.0000
0.0066	0.0000
0.0000	0.0204
0.0000	0.0204
0.0461	0.0000
0.0000	0.0000
0.0000	0.0408
0.0000	0.0000
0.0000	0.0204
0.0000	0.0000
0.0000	0.0000
0.0132	0.0612
0.0066	0.0000
0.0066	0.0000
0.0000	0.0000
0.0132	0.0000
0.0197	0.0000
0.0000	0.0000
0.0066	0.0000
0.0000	0.0000
0.0066	0.0000
0.0000	0.0000
0.0000	0.0204
0.0066	0.0000
0.0000	0.0000
0.0000	0.0204
0.0066	0.0000
0.0000	0.1224
0.0066	0.0000
0.0000	0.1224
0.0066	0.0000
0.0000	0.0000
0.0066	0.0000
0.0066	0.0612
0.0066	0.0000
0.0987	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0204
0.0000	0.0408
0.0066	0.0408
-	-
-	-
-	-
0.0000	0.0612

2	3
0.2500	0.0874
0.8269	0.3204
0.5577	0.2427
0.9423	0.3689
0.9423	0.3689
0.8269	0.2039
0.0385	0.4175
0.5000	0.3786
0.9231	0.2718
0.5769	0.3107
0.9808	0.2816
0.6923	0.2039
0.0000	0.3301
0.8654	0.2427
0.4808	0.3301
0.8269	0.3981
0.1154	0.3981
0.1154	0.0485
0.9615	0.2330
0.0000	0.3398
0.3462	0.3592
0.5192	0.4272
0.9615	0.3398
0.3654	0.3495
0.9808	0.1748
0.9808	0.1262
0.9231	0.4078
0.9231	0.3398
0.0000	0.2427
0.3846	0.3107
0.5577	0.1748
0.7692	0.4175
0.8846	0.3592
0.9808	0.2330
0.1538	0.1942
0.5577	0.2039
0.0000	0.2233
0.0000	0.2621
0.9231	0.1748
0.5962	0.2913
0.1346	0.2233
0.3077	0.1650
0.9808	0.3301
0.1923	0.3010
0.4808	0.2524
0.7692	0.3689
0.9423	0.2427
0.0385	0.2621
0.0000	0.2816
0.9615	0.3398
0.9615	0.2233
-	0.2621
0.8431	0.9615

2	4
0.0099	0.0000
0.0000	0.0132
0.0000	0.0132
0.0099	0.0066
0.0000	0.0000
0.0000	0.0066
0.0297	0.0066
0.0000	0.0987
0.0000	0.0066
0.0099	0.0000
0.0495	0.0066
0.0099	0.0066
0.0099	0.0000
0.0000	0.0000
0.0000	0.0132
0.0000	0.0000
0.0000	0.0066
0.0099	0.0000
0.0198	0.0066
0.0297	0.0132
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0066
0.0099	0.0066
0.0396	0.0000
0.0099	0.0000
0.0099	0.0000
0.1683	0.0000
0.0000	0.0000
0.0000	0.0066
0.0000	0.0000
0.0000	0.0000
0.0099	0.0066
0.0099	0.0000
0.0000	0.0789
0.0099	0.0000
0.0099	0.0132
0.0000	0.0000
0.0099	0.0066
0.0099	0.0000
0.0099	0.0132
0.0099	0.0000
0.0099	0.0000
0.0099	0.0197
0.0000	0.0000
0.0000	0.0000
0.0000	0.0066
0.0198	0.0066
0.0099	-
0.0099	-
-	-
0.0196	0.0000

3	4
0.2653	0.2970
0.6939	0.0000
0.6327	0.4950
0.7755	0.2376
0.7143	0.1188
0.4898	0.0198
0.8367	0.4950
0.7347	0.5050
0.5918	0.2277
0.6531	0.1782
0.6327	0.4851
0.4490	0.5050
0.6939	0.3861
0.5510	0.3267
0.7143	0.5050
0.8163	0.3960
0.7551	0.4752
0.1020	0.4851
0.6531	0.0000
0.6735	0.4950
0.7347	0.2673
0.8571	0.2970
0.7551	0.0693
0.7347	0.2871
0.4694	0.0099
0.4082	0.0495
0.7755	0.4653
0.7551	0.3960
0.6939	0.0396
0.6735	0.4950
0.4286	0.4851
0.8776	0.0198
0.7755	0.2475
0.4694	0.4950
0.4490	0.4851
0.4898	0.0000
0.5306	0.3465
0.5510	0.5050
0.4490	0.0297
0.5714	0.4950
0.4898	0.4851
0.3673	0.5050
0.7143	0.4158
0.5714	0.4653
0.6531	0.0099
0.7755	0.0891
0.5714	0.3861
0.5102	0.4950
0.5510	0.4950
0.7143	-
0.5306	-
0.5510	-
1.0000	0.7551

3	4
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0435	0.0000
0.0652	0.0000
0.0000	0.0000
0.0000	0.0000
0.0217	0.0000
0.0000	0.0000
0.0000	-
0.0000	-
0.0000	-
0.1739	-
0.0217	-
0.0000	-
0.0000	-
0.0000	-
0.1087	-
0.0000	-
0.0000	-
0.0000	-
0.0652	-
0.0000	-
0.0000	-
0.0435	-
0.0000	-
0.0000	-
0.0000	-
0.0000	-
0.0000	-
0.0217	-
0.0000	-
0.0000	-
0.0435	-
0.0000	-
0.0000	-
0.0000	-
0.0652	-
0.0000	-
0.0000	-
0.0435	-
0.0000	-
0.1087	-
0.0000	-
0.0652173913043478	0

Amersfoort

1	2	3	4	5
0.0000	0.0196	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0196
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0192	0.0444	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0192	0.0000	0.0000
0.0000	0.0000	0.0000	0.0222	0.0196
0.0000	0.0784	0.0385	0.0667	0.0196
0.0000	0.0000	0.0385	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0385	0.0000	0.0000
0.0000	0.0392	0.0000	0.0222	0.0000
0.0000	0.0196	0.0192	0.0000	0.0000
0.0000	0.1373	0.0000	0.0000	0.0000
0.0000	0.0000	0.0192	0.0000	0.0000
0.0000	0.0000	0.0385	0.0000	0.0000
0.0000	0.0000	0.0962	0.0000	0.0000
0.0000	0.0000	0.0385	0.0000	0.0000
0.0000	0.0196	0.0577	0.0000	0.1373
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0196	0.0192	0.0000	0.0000
0.0000	0.0000	0.0577	0.0000	0.0000
0.0000	0.0000	0.0192	0.0000	0.0392
0.0000	0.0000	0.0192	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0588	0.0000	0.0000	0.0000
0.0000	0.0980	0.0192	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.1176	0.0385	0.0222	0.0196
0.0000	0.0392	0.0192	0.0000	0.0000
0.0000	0.0000	0.1154	0.0000	0.0000
0.0000	0.0000	0.0769	0.0000	0.0000
0.0000	0.0000	0.0000	0.0222	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0192	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0196
0.0000	0.0392	0.0000	0.0000	0.0000
0.0000	0.0000	0.0192	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.1176	0.0192	0.0000	0.0000
0.0000	0.0000	0.0192	0.0000	0.0000
0.0000	0.0000	0.0385	0.0000	0.0000
0.0000	0.0000	0.0192	0.0000	0.0196
0.0000	0.0000	0.0000	0.0000	0.0196
0.0000	0.0196	0.0385	0.0222	0.0000
0.0000	0.0000	0.0385	-	0.0000
0.0000	0.0000	0.0000	-	0.0000
0.0000	0.0784	0.0000	-	0.0000
-	0.0000	0.0192	-	0.0000
-	0.0000	0.0192	-	0.0000
-	0.1176	0.2885	-	0.0000
-	-	0.4231	-	-
0	0.0784313725490196	0.0576923076923077	0	0.0196078431372549

1	2
0.9608	0.9792
0.9804	0.9792
0.9608	0.9792
0.9804	0.9792
0.9216	0.9792
0.9216	0.8958
0.9216	0.9792
0.9608	0.9792
0.9020	0.9167
0.9804	0.9792
0.9608	0.9792
0.9608	0.9792
0.9608	0.9792
0.9804	0.4792
0.9804	0.9792
0.9608	0.9792
0.9608	0.9792
0.9804	0.9792
0.9804	0.9792
0.9804	0.9792
0.9804	0.9792
0.8235	0.9792
0.8431	0.9792
0.9804	0.9583
0.9608	0.9792
0.9804	0.6875
0.8824	0.9167
0.9608	0.9792
0.9804	0.9792
0.9412	0.9792
0.8824	0.9792
0.9608	0.9792
0.9804	0.9792
0.9804	0.9792
0.9804	0.9792
0.9804	0.9792
0.9216	0.9792
0.9608	0.9792
0.9804	0.9792
0.9804	0.6667
0.9608	0.9792
0.9216	0.9792
0.9216	0.9583
0.9804	0.9375
0.9412	0.9792
0.9216	0.9792
0.9804	0.9792
0.9804	0.9792
-	1.0000
-	1.0000
-	1.0000
-	-
1.0000	1.0000

1	3
0.4854	0.9792
0.4854	0.9792
0.4757	0.9792
0.4854	0.9792
0.4757	0.9792
0.4757	0.9792
0.4854	0.9792
0.4854	0.9792
0.4757	0.9792
0.4757	0.9792
0.4854	0.9792
0.4854	0.9792
0.4951	0.0000
0.4854	0.9792
0.4854	0.9167
0.4854	0.9792
0.4854	0.9167
0.4854	0.9792
0.4854	0.9792
0.4563	0.9375
0.4563	0.9792
0.4854	0.9792
0.4757	0.9792
0.4854	0.9792
0.4466	0.9792
0.4854	0.9792
0.4854	0.9792
0.4757	0.9792
0.4757	0.6250
0.4854	0.9792
0.4854	0.9792
0.4854	0.9792
0.4854	0.9792
0.4757	0.9792
0.4757	0.9792
0.4854	0.9792
0.4854	0.9792
0.4757	0.9792
0.4854	0.9792
0.4854	0.9792
0.4757	0.9792
0.4757	0.9792
0.4854	0.9792
0.4854	0.9792
-	1.0000
-	1.0000
-	1.0000
-	1.0000
1.0000	0.9808

1	4
0.2973	0.9375
0.2973	0.8125
0.2905	0.9792
0.2973	0.9792
0.2838	0.9792
0.2770	0.8333
0.2838	0.9792
0.2838	0.9792
0.2703	0.9792
0.2973	0.8542
0.2905	0.9792
0.2973	0.8750
0.2973	0.9792
0.2973	0.9792
0.2838	0.9792
0.2973	0.9792
0.2838	0.9792
0.2973	0.9792
0.2973	0.9792
0.2973	0.9792
0.2973	0.9375
0.2568	0.9792
0.2500	0.9375
0.2973	0.9792
0.2973	0.6042
0.2973	0.9792
0.2432	0.9792
0.2838	0.9792
0.2973	0.9792
0.2838	0.9792
0.2432	0.9792
0.2973	0.9792
0.2905	0.5833
0.2973	0.9792
0.2973	0.9792
0.2973	0.9583
0.2635	0.9792
0.2973	0.9792
0.2973	0.9792
0.2973	0.9792
0.2973	0.9792
0.2770	0.9792
0.2770	0.9792
0.2973	0.9792
0.2905	0.9792
0.2703	-
0.3041	-
0.3041	-
-	-
-	-
-	-
-	-
1.0000	1.0000

2	3
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0192	0.0000
0.0000	0.0000
0.0385	0.0000
0.0000	0.0097
0.0385	0.0777
0.0385	0.0000
0.0192	0.0000
0.0192	0.0000
0.0962	0.0000
0.0962	0.0000
0.1731	0.0000
0.0385	0.0000
0.0000	0.0000
0.0385	0.0485
0.0000	0.0000
0.0385	0.0000
0.0385	0.0388
0.0385	0.0000
0.0000	0.0097
0.0385	0.0000
0.0385	0.0000
0.0385	0.0000
0.1154	0.0000
0.1154	0.0000
0.0192	0.0097
0.0577	0.0000
0.0192	0.0194
0.0000	0.0194
0.0577	0.0874
0.0192	0.0000
0.0000	0.0000
0.0000	0.0000
0.0769	0.0000
0.0000	0.0000
0.0385	0.0000
0.0000	0.0000
0.1346	0.0000
0.0577	0.0000
0.0000	0.0000
0.0577	0.0097
0.0385	0.0000
0.0000	0.0000
0.0000	0.0000
0.0385	0.0000
0.0192	0.0000
0.0192	0.0000
0.0000	0.0485
0.0192	0.2330
-	0.2718
0.0784	0.0385

2	4
0.0000	0.0068
0.0000	0.0000
0.0000	0.0000
0.0000	0.0068
0.0000	0.0000
0.0103	0.0000
0.0000	0.0203
0.0000	0.0338
0.0000	0.0000
0.0000	0.0000
0.0000	0.0270
0.0000	0.0135
0.0000	0.0000
0.0515	0.0068
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0515	0.0000
0.0309	0.0000
0.0000	0.0000
0.0412	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0068
0.0000	0.0000
0.0000	0.0000
0.0000	0.0068
0.0619	0.0135
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0270
0.0000	-
0.0000	-
0.0103	-
0.0000	-
0.0000	-
0.0000	-
-	-
0.0000	0.0000

3	4
0.0000	0.0206
0.0000	0.0206
0.0000	0.0000
0.0000	0.0412
0.0000	0.0000
0.0000	0.0103
0.0000	0.0309
0.0222	0.0103
0.0000	0.0206
0.0000	0.0103
0.0000	0.0103
0.0000	0.0309
0.0000	0.0000
0.0000	0.0000
0.0000	0.0103
0.0000	0.0000
0.0444	0.0000
0.0000	0.0206
0.0000	0.0103
0.0000	0.0206
0.0000	0.0206
0.0222	0.0000
0.0000	0.0309
0.0000	0.0000
0.0000	0.0206
0.0000	0.0000
0.0000	0.0000
0.0000	0.0103
0.0000	0.0206
0.0000	0.0206
0.0667	0.0000
0.0667	0.0000
0.0000	0.0206
0.0000	0.0000
0.0000	0.0000
0.0000	0.0206
0.0000	0.0206
0.0000	0.0103
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0103
0.0000	0.0103
0.0000	-
0.0000	-
0.0000	-
0.0000	-
0.0000	-
0.3333	-
0.4889	-
0.0385	0.0000

Haarlem

1	2	3	4	5
0.0204	0.0000	0.0000	0.0000	0.3878
0.0204	0.0000	0.0000	0.0000	0.0204
0.0000	0.0392	0.0000	0.0000	0.0000
0.0000	0.0000	0.0385	0.0000	0.0000
0.0000	0.0392	0.0000	0.0000	0.0204
0.0000	0.0196	0.0000	0.0000	0.0204
0.0000	0.0196	0.0000	0.0000	0.0204
0.0000	0.0784	0.0000	0.0000	0.0000
0.2041	0.0784	0.0000	0.0000	0.0408
0.0000	0.0196	0.0000	0.0000	0.0000
0.0000	0.0196	0.0385	0.0000	0.0816
0.0000	0.1373	0.0000	0.0000	0.2857
0.0000	0.0000	0.0000	0.0000	0.0204
0.0204	0.0392	0.0000	0.0000	0.0204
0.0000	0.0392	0.0000	0.0000	0.0408
0.0408	0.0392	0.0385	0.0000	0.0204
0.0204	0.2745	0.0000	0.0000	0.0204
0.0000	0.0000	0.0385	0.0000	0.0204
0.0000	0.0196	0.0000	0.0000	0.0612
0.0000	0.0392	0.0192	0.0000	0.0204
0.0000	0.0196	0.0385	0.0000	0.0000
0.0000	0.0000	0.0000	0.0204	0.0204
0.0000	0.0000	0.0000	0.0000	0.0408
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0392	0.0000	0.0000	0.0612
0.0204	0.0000	0.0000	0.0000	0.0000
0.0000	0.1176	0.0000	0.0204	0.0000
0.0000	0.0392	0.0192	0.0000	0.0204
0.0000	0.0000	0.0192	0.0000	0.0000
0.0000	0.3529	0.0000	0.0000	0.0000
0.0816	0.0392	0.0000	0.0000	0.0204
0.0000	0.2549	0.0192	0.0000	0.0204
0.0000	0.0392	0.0000	0.0000	0.0000
0.0000	0.0392	0.0000	0.0000	0.0000
0.0204	0.0196	0.0385	0.0000	0.0000
0.0000	0.0000	0.0000	0.0408	0.0204
0.0204	0.0980	0.0000	0.0000	0.0204
0.0000	0.0000	0.0000	0.0000	0.0204
0.0000	0.0196	0.0192	0.0000	0.1224
0.0408	0.0392	0.0000	0.0000	0.0204
0.0408	0.0392	0.2500	0.0000	0.0204
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0816
0.0000	0.0000	0.0000	0.0000	0.0204
0.0000	0.0392	0.0000	0.0000	0.0612
0.0000	0.0000	0.0000	0.0000	0.0204
0.0000	0.0000	0.0000	0.0000	0.0000
0.0204	0.0196	0.0000	0.0000	0.0204
-	0.0980	0.0385	-	-
-	0.1373	0.0192	-	-
-	-	0.1346	-	-
0.0204081632653061	0.117647058823529	0.0384615384615385	0	0.0612244897959184

1	2
0.5294	0.9796
0.7255	0.9592
0.7059	0.2653
0.7647	0.3673
0.6078	0.7347
0.7059	0.7959
0.7843	0.9592
0.4706	0.0408
0.9216	0.0204
0.5686	0.9796
0.6078	0.9796
0.8039	0.0000
0.7059	0.8980
0.4902	0.1429
0.7059	0.9796
0.5098	0.9796
0.7843	0.0000
0.8235	0.9388
0.6275	0.9592
0.7451	0.2653
0.7255	0.5102
0.6275	0.1837
0.7255	0.4286
0.8824	0.8571
0.8235	0.7551
0.6863	0.9796
0.6667	0.9592
0.3529	0.1224
0.6078	0.9796
0.7843	0.9592
0.7451	0.9796
0.9216	0.3878
0.6078	0.9796
0.8627	0.6531
0.4706	0.1020
0.5098	0.5102
0.4510	0.9796
0.5686	0.0204
0.6667	0.9592
0.6275	0.8367
0.5686	0.9796
0.7059	0.9796
0.8039	0.5102
0.7843	0.6735
0.7255	0.9592
0.4510	0.4898
0.5882	0.4082
0.8431	0.9592
0.6078	0.9796
-	1.0000
-	1.0000
-	-
1.0000	0.9020

1	4
0.1316	0.9592
0.2237	0.1224
0.2105	0.4082
0.2303	0.9388
0.1513	0.7551
0.2171	0.0204
0.2303	0.7755
0.0855	0.6735
0.2895	0.9592
0.1579	0.0816
0.1842	0.0000
0.2500	0.0612
0.2105	0.8571
0.1250	0.0612
0.2039	0.9592
0.1513	0.4694
0.2237	0.9184
0.2566	0.9388
0.1908	0.4898
0.2039	0.9796
0.2105	0.9796
0.1645	0.9592
0.2237	0.6735
0.3026	0.7959
0.2632	0.2041
0.2039	0.5918
0.2237	0.2245
0.0263	0.9796
0.1645	0.9184
0.2237	0.9796
0.2237	0.1224
0.2697	0.9592
0.1645	0.9592
0.2632	0.9184
0.1118	0.5918
0.1316	0.4082
0.1118	0.0408
0.1184	0.9592
0.1842	0.6327
0.1974	0.9592
0.1711	0.2245
0.2039	0.4694
0.2632	0.6735
0.2434	0.4898
0.2237	0.8163
0.0789	0.1837
0.1711	0.7959
0.2829	0.0204
0.1645	0.5510
-	-
-	-
-	-
0.9388	0.8571

2	3
0.9808	0.4563
0.9231	0.4272
0.9808	0.4660
0.9808	0.4660
0.9808	0.4466
0.9808	0.4660
0.7885	0.4660
0.9808	0.4369
0.9808	0.4563
0.9038	0.4660
0.8846	0.4660
0.9808	0.2330
0.9808	0.4563
0.9808	0.4563
0.7308	0.4466
0.0000	0.4854
0.9808	0.4466
0.9615	0.4660
0.4423	0.4563
0.9808	0.4563
0.9808	0.4563
0.9808	0.4563
0.9808	0.3398
0.9615	0.4563
0.9615	0.4078
0.7885	0.3981
0.8654	0.4563
0.9808	0.3204
0.9038	0.4660
0.9231	0.4757
0.1923	0.4175
0.9808	0.4175
0.3654	0.4660
0.9808	0.4660
0.9808	0.4563
0.9808	0.4757
0.8077	0.2913
0.9808	0.4466
0.9038	0.4272
0.9808	0.4757
0.7115	0.3010
0.8077	0.4369
0.9808	0.4175
0.9808	0.4563
0.8846	0.4078
0.9808	0.4369
0.9615	0.4563
0.9615	0.3786
0.8654	0.3689
0.9423	0.4757
0.7692	0.4757
-	0.4757
0.9804	1.0000

2	4
0.0000	0.0000
0.0000	0.0263
0.0000	0.0066
0.0000	0.0000
0.0000	0.0066
0.0000	0.0197
0.0000	0.0066
0.0000	0.0000
0.0000	0.0066
0.0000	0.0132
0.0000	0.0132
0.0099	0.0132
0.0000	0.0000
0.0000	0.0263
0.0099	0.0000
0.0396	0.0066
0.0495	0.0066
0.0000	0.0066
0.0099	0.0066
0.0000	0.0066
0.0000	0.0000
0.0000	0.0000
0.0000	0.0066
0.0000	0.0000
0.0000	0.0066
0.0000	0.0132
0.0000	0.0066
0.0000	0.0132
0.0099	0.0066
0.0000	0.0132
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0.0000	0.0000
0.1287	0.0000
0.0000	0.0066
0.0000	0.0000
0.0000	0.0066
0.0000	0.0526
0.0099	0.0066
0.0000	0.0066
0.0000	0.0000
0.0000	0.0066
0.0099	0.0066
0.0000	0.0066
0.0000	0.0132
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0.0000	0.0000
0.0000	0.0066
0.0000	0.0132
0.0000	0.0066
0.0099	-
0.0297	-
-	-
0.0392	0.0000

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0.3200	0.2239
0.3133	0.2338
0.3200	0.2388
0.3200	0.2239
0.3200	0.2289
0.3200	0.2388
0.2800	0.2438
0.3200	0.2040
0.3200	0.2090
0.3067	0.2388
0.3067	0.2338
0.3200	0.2488
0.3200	0.2438
0.3200	0.2338
0.2667	0.2488
0.0533	0.2438
0.3200	0.2488
0.3200	0.2338
0.1733	0.2388
0.3200	0.2338
0.3200	0.1841
0.3200	0.2139
0.3200	0.2388
0.3200	0.2239
0.3200	0.2189
0.2667	0.2289
0.3000	0.2388
0.3200	0.2338
0.3133	0.2388
0.3133	0.2239
0.0533	0.2488
0.3200	0.2338
0.1667	0.2239
0.3200	0.2388
0.3200	0.2090
0.3200	0.2289
0.2867	0.2239
0.3200	0.2388
0.3133	0.2289
0.3200	0.1443
0.2400	0.2338
0.3000	0.2338
0.3200	0.2289
0.3200	0.2488
0.3067	0.2388
0.3200	0.2488
0.3200	0.2289
0.3200	0.1692
0.2933	0.2388
0.3200	-
0.2667	-
-	-
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0.9796	0.4653
0.9592	0.5050
0.9796	0.5050
0.9592	0.4950
0.9592	0.5050
0.9796	0.5050
0.9796	0.4950
0.9592	0.4950
0.9796	0.5050
0.9796	0.5050
0.9796	0.5050
0.7143	0.5050
0.9796	0.4950
0.9796	0.5050
0.9592	0.4653
0.9796	0.5050
0.9592	0.5050
0.9592	0.5050
0.9796	0.5050
0.9796	0.3960
0.9592	0.4950
0.9592	0.4653
0.9184	0.5050
0.9796	0.5050
0.9388	0.5050
0.9184	0.5050
0.9796	0.5050
0.8367	0.2673
0.9796	0.5050
0.9796	0.4257
0.9184	0.5050
0.9592	0.5050
0.9796	0.4851
0.9796	0.4653
0.9796	0.5050
0.9796	0.5050
0.7755	0.5050
0.9796	0.5050
0.9388	0.5050
0.9592	0.4653
0.8163	0.5050
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0.9592	0.5050
0.9796	0.5050
0.9592	0.5050
0.9592	0.5050
0.9796	0.5050
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0.9184	0.5050
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0.0102	0.0067
0.0000	0.0000
0.0000	0.0333
0.0408	0.0000
0.0204	0.0000
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0.0000	0.0067
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0.0102	0.0133
0.0102	0.0067
0.0000	0.0067
0.0204	0.0000
0.0000	0.0000
0.0000	0.0067
0.0102	0.0000
0.0204	0.0000
0.0000	0.0133
0.0102	0.0000
0.0102	0.0000
0.0000	0.0333
0.0102	0.0000
0.0000	0.0000
0.0102	0.0000
0.0306	0.0000
0.0000	0.0000
0.0408	0.0000
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0.0000	0.0000
0.0204	0.0000
0.0102	0.0000
0.0102	0.0000
0.0000	0.0000
0.0102	0.0333
0.0000	0.0000
0.1429	0.0000
0.0000	0.0000
0.0102	0.0533
0.0102	0.0000
0.0102	0.0133
0.0000	0.0067
0.0000	0.0000
0.0408	0.0067
0.0204	-
0.0102	-
0.0612	-
0.0192	0.0204

4	5
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0.9796	0.4898
0.9592	0.4898
0.9796	0.4796
0.9796	0.4898
0.9796	0.4898
0.9796	0.4694
0.9796	0.4796
0.9796	0.4898
0.9796	0.4898
0.9796	0.4898
0.9796	0.4898
0.9796	0.4898
0.9592	0.4898
0.9796	0.4898
0.9796	0.4898
0.9796	0.4898
0.9796	0.4898
0.8980	0.4898
0.9592	0.4694
0.9388	0.4694
0.9796	0.4898
0.9796	0.4694
0.9796	0.4796
0.9796	0.4796
0.9796	0.4898
0.6327	0.4898
0.9796	0.4898
0.8776	0.4796
0.9796	0.4898
0.9796	0.4898
0.9592	0.4694
0.9592	0.4898
0.9796	0.4796
0.9796	0.4796
0.9796	0.4898
0.9796	0.4898
0.9796	0.4796
0.9592	0.3878
0.9796	0.4898
0.9796	0.4898
0.9796	0.4898
0.9796	0.4898
0.9796	0.4898
0.9796	0.4898
0.9796	0.4796
0.9796	0.4388
0.9796	0.4898
-	-
-	-
-	-
1.0000	1.0000

Hilversum

1	2	3	4
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0.0612	0.0196	0.0000	0.0000
0.0204	0.0000	0.0192	0.0000
0.0408	0.0000	0.0000	0.0204
0.0000	0.0000	0.0000	0.0000
0.1020	0.0000	0.0000	0.0000
0.0408	0.0196	0.0192	0.0000
0.1020	0.0196	0.0000	0.0000
0.0408	0.0000	0.0000	0.0612
0.0000	0.0000	0.0385	0.0000
0.0204	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0408
0.0000	0.0196	0.0000	0.0000
0.0204	0.0000	0.0000	0.0000
0.4082	0.0784	0.0385	0.0000
0.0204	0.0588	0.0962	0.0000
0.0204	0.0196	0.0000	0.0000
0.1429	0.0392	0.0000	0.0000
0.0000	0.0196	0.0000	0.0000
0.0000	0.0392	0.0000	0.0204
0.0000	0.0000	0.1346	0.0000
0.0204	0.0196	0.0000	0.0000
0.0000	0.0000	0.0577	0.0204
0.0408	0.0196	0.0000	0.0204
0.0204	0.0196	0.0000	0.0204
0.0204	0.0000	0.0000	0.0000
0.0000	0.0000	0.0769	0.0000
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0.0408	0.0000	0.0000	0.0000
0.2041	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0408
0.0204	0.0000	0.0000	0.0000
0.0000	0.0784	0.0000	0.0000
0.1224	0.0000	0.0000	0.1224
0.0000	0.0000	0.0385	0.0000
0.0000	0.0000	0.0000	0.0000
0.0408	0.0000	0.0000	0.0000
0.0204	0.0000	0.0577	0.0000
0.0612	0.2941	0.0000	0.0000
0.0000	0.0196	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0577	0.0000
0.0204	0.0000	0.0000	0.0000
0.0204	0.0784	0.0000	0.0000
0.0204	0.0196	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0204	0.0000	0.0000	0.0000
0.0204	0.0000	0.0000	0.0612
-	0.0588	0.0000	-
-	0.0000	0.0385	-
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0.6863	0.1837
0.6275	0.5510
0.5490	0.6122
0.6667	0.8980
0.4706	0.0612
0.5686	0.1429
0.7255	0.7959
0.0980	0.5306
0.4314	0.3469
0.1961	0.7755
0.2941	0.0204
0.5098	0.1020
0.5098	0.4490
0.3137	0.9796
0.2549	0.0408
0.0784	0.1429
0.9020	0.2449
0.6275	0.2245
0.3922	0.9796
0.1569	0.1020
0.2549	0.0408
0.6471	0.7959
0.7451	0.0408
0.4314	0.0000
0.5294	0.7959
0.1373	0.9592
0.4706	0.7551
0.2353	0.6327
0.9412	0.8776
0.1569	0.2857
0.5882	0.5510
0.4510	0.0204
0.4118	0.6327
0.4314	0.9796
0.5294	0.1837
0.3333	0.4898
0.5098	0.3878
0.4314	0.9796
0.7647	0.0612
0.1765	0.6735
0.1765	0.1633
0.1961	0.7959
0.2353	0.0408
0.5882	0.3469
0.3922	0.6531
0.6078	0.1429
0.3529	0.4286
-	0.9592
-	0.3061
-	-
0.9592	0.8235

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0.0388	0.0000
0.0194	0.0000
0.0000	0.0408
0.0291	0.0000
0.0097	0.0000
0.0485	0.0000
0.0000	0.0204
0.0291	0.0000
0.0388	0.0000
0.0000	0.0204
0.0388	0.0204
0.0000	0.0204
0.0000	0.0000
0.0000	0.0408
0.0097	0.0000
0.1165	0.0000
0.0000	0.1837
0.0000	0.0000
0.0874	0.0000
0.0000	0.0204
0.0000	0.0000
0.0000	0.1020
0.0000	0.0204
0.0000	0.1020
0.0000	0.0000
0.0000	0.0000
0.0000	0.0408
0.0000	0.2041
0.0000	0.0000
0.0097	0.0000
0.0874	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0408
0.0291	0.0204
0.0000	0.0000
0.0000	0.0000
0.0194	0.0204
0.0291	0.0816
0.0097	0.0000
0.0000	0.0000
0.0000	0.0204
0.0000	0.0408
0.0000	0.0000
0.0000	0.0000
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0.0000	0.0000
0.0000	0.0000
-	0.0408
-	0.1224
-	0.1429
0.0204	0.1154

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0.0329	0.0000
0.0000	0.0204
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0.0132	0.0000
0.0000	0.0000
0.0000	0.0204
0.0000	0.0204
0.0066	0.0000
0.0855	0.0000
0.0000	0.0000
0.0000	0.0000
0.0395	0.0204
0.0000	0.0204
0.0000	0.0408
0.0000	0.0000
0.0066	0.0000
0.0000	0.0408
0.0000	0.0612
0.0066	0.0408
0.0000	0.0000
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0.0000	0.2653
0.0000	0.0204
0.0528	0.0000
0.0000	0.0612
0.0000	0.0204
0.0000	0.0204
0.0000	0.0816
0.0000	0.0000
0.0000	0.0000
0.0066	0.0000
0.0132	0.0000
0.0132	0.0000
0.0000	0.0000
0.0000	0.0204
0.0000	0.0204
0.0000	0.0204
0.0000	0.0000
0.0066	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0816
-	-
-	-
-	-
0.0000	0.0408

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0.1731	0.2621
0.0769	0.2816
0.4423	0.0388
0.5000	0.0777
0.7885	0.0777
0.0000	0.2233
0.0962	0.1068
0.6346	0.0777
0.2308	0.2233
0.1923	0.1553
0.5962	0.0388
0.0000	0.0777
0.0577	0.0291
0.3077	0.1748
0.9615	0.2718
0.0000	0.2524
0.0577	0.2330
0.0962	0.1748
0.0962	0.2136
0.9615	0.0874
0.0192	0.3883
0.0000	0.3204
0.5962	0.2621
0.0000	0.0097
0.0000	0.0485
0.6346	0.2136
0.8654	0.0291
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0.4615	0.0485
0.7115	0.0485
0.1538	0.1748
0.3462	0.1650
0.0000	0.2524
0.4808	0.1845
0.8846	0.3689
0.1154	0.0583
0.4038	0.0971
0.1923	0.1650
0.9808	0.0874
0.0192	0.0680
0.4808	0.3010
0.0385	0.3689
0.6154	0.2039
0.0192	0.1262
0.1346	0.1262
0.4615	0.1748
0.0962	0.2330
0.2308	0.0388
0.8077	0.1456
0.1154	0.2427
-	0.2330
0.6471	0.6346

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0.0594	0.2303
0.0693	0.0197
0.0297	0.1316
0.1287	0.0526
0.1584	0.0921
0.3168	0.0461
0.0000	0.0592
0.0297	0.0263
0.2376	0.0592
0.0990	0.0329
0.0693	0.0461
0.2475	0.0197
0.0000	0.1513
0.0099	0.0987
0.0891	0.1316
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0.0000	0.1908
0.0000	0.1316
0.0198	0.2039
0.0297	0.1908
0.4653	0.0921
0.0297	0.0592
0.0000	0.0724
0.2376	0.0197
0.0099	0.0066
0.0000	0.1776
0.2673	0.0395
0.3762	0.0395
0.1980	0.1053
0.1584	0.0724
0.3069	0.0329
0.0792	0.1118
0.1188	0.1513
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0.4257	0.1316
0.0495	0.0197
0.1287	0.0658
0.0693	0.0263
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0.0000	0.0263
0.1782	0.0263
0.0297	0.0263
0.2574	0.1842
0.0198	0.0724
0.0693	0.0855
0.1485	0.0724
0.0000	0.0592
0.0891	0.0987
0.3465	-
0.0792	-
-	-
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0.0612	0.0000
0.0000	0.0000
0.0000	0.0297
0.0408	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0297
0.0000	0.0000
0.0000	0.0000
0.0204	0.0000
0.0408	0.0198
0.0000	0.0000
0.0000	0.0099
0.0000	0.0000
0.0000	0.0099
0.1633	0.0000
0.0000	0.0000
0.0816	0.0099
0.0000	0.0297
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0.0000	0.0000
0.0000	0.0099
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0.0000	0.0000
0.0000	0.0495
0.0204	0.0000
0.0000	0.0000
0.0000	0.0000
0.0408	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0612	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0297
0.0000	-
0.0408	-
0.0408	-
0.0385	0.0000

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0.0392	0.0192	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0204
0.0000	0.0000	0.0000
0.0000	0.0192	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0408
0.0000	0.0000	0.0000
0.0000	0.0769	0.0000
0.0000	0.0000	0.0204
0.0000	0.0000	0.0000
0.0000	0.1923	0.1020
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0385	0.0000
0.0000	0.0192	0.0000
0.0392	0.0192	0.0000
0.0000	0.0192	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0408
0.0000	0.0000	0.0204
0.0000	0.0192	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0204
0.0000	0.0000	0.0000
0.0000	0.0192	0.0000
0.0000	0.0000	0.0204
0.0000	0.0000	0.0000
0.0392	0.0000	0.0612
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0816
0.0000	0.0000	0.0204
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0392	0.0192	0.0408
0.0000	0.0000	0.0000
0.0000	0.0192	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0204
0.0000	0.0000	-
0.0000	0.0192	-
-	0.0385	-
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0.0192	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0192	0.0784
0.0192	0.0000
0.0000	0.0000
0.0000	0.1176
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0.0000	0.0000
0.0000	0.0392
0.0000	0.0196
0.0192	0.0000
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0.0000	0.0000
0.0000	0.0000
0.0192	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0196
0.0000	0.0000
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0.0385	0.0000
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0.0000	0.0000
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0.0192	0.0000
0.0192	0.0000
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0.0577	0.0000
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0.0000	0.0000
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0.0000	0.0000
-	0.0196
0.0000	0.0192

2	4
0.0000	0.0196
0.0297	0.0000
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0.0000	0.0000
0.0099	0.0588
0.0000	0.0000
0.0000	0.0588
0.0000	0.0000
0.0099	0.0000
0.0000	0.0000
0.0000	0.0000
0.0198	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0196
0.0000	0.0000
0.0099	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0196
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0392
0.0000	0.0196
0.0000	0.0000
0.0000	0.0000
0.0099	0.0000
0.0099	0.0000
0.0000	0.0000
0.0198	0.0000
0.0000	0.0000
0.0000	0.0000
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0.0000	-
-	-
0.0000	0.0000

3	4
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0.0000	0.0000
0.0000	0.0000
0.0204	0.0198
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0099
0.0204	0.0000
0.0408	0.0000
0.0000	0.0297
0.0000	0.0000
0.1837	0.0396
0.0000	0.0000
0.0000	0.0000
0.1020	0.0000
0.0408	0.0000
0.0204	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0099
0.0000	0.0000
0.0000	0.0000
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0.0204	0.0000
0.0000	0.0099
0.0000	0.0000
0.0204	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0297
0.0000	0.0099
0.0204	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0693
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0198
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0204	0.0099
0.0000	-
0.0000	-
0.0204	-
0.0385	0.0000

Purmerend

1	2	3	4
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0.0000	0.0392	0.0000	0.0000
0.0000	0.0000	0.0192	0.0612
0.0000	0.0392	0.1538	0.0000
0.0204	0.0196	0.0385	0.0612
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0192	0.0408
0.0000	0.0000	0.0192	0.0204
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0385	0.0204
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0.0204	0.0000	0.0000	0.0204
0.0204	0.0784	0.0000	0.0408
0.1020	0.0000	0.0000	0.0204
0.0000	0.0392	0.0192	0.2041
0.0000	0.0196	0.0000	0.0000
0.0000	0.0000	0.0192	0.0000
0.0000	0.0000	0.0000	0.0000
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0.0000	0.0784	0.0000	0.0000
0.0000	0.0000	0.0192	0.0000
0.0408	0.0000	0.1923	0.0000
0.0408	0.0000	0.0192	0.0000
0.0000	0.0000	0.0192	0.0000
0.0408	0.0000	0.0000	0.0816
0.0000	0.0196	0.0000	0.0000
0.0000	0.0000	0.0577	0.0000
0.1020	0.0000	0.0000	0.0000
0.0000	0.1569	0.0000	0.0000
0.0000	0.0392	0.0385	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0769	0.0000
0.0000	0.0196	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.1765	0.0000	0.0000
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0.0000	0.1373	0.0000	0.0000
0.0000	0.0000	0.0192	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0192	0.0000
0.0000	0.0784	0.0769	0.0204
0.0000	0.0784	0.0000	0.0204
0.0612	0.0000	0.0577	0.0000
-	0.0196	0.0000	-
-	0.0196	0.1154	-
-	-	0.0000	-
0.0408163265306122	0.0784313725490196	0.0576923076923077	0.0204081632653061

1	2
0.9804	0.8571
0.9804	0.9184
0.9804	0.8367
0.6275	0.8776
0.9804	0.7347
0.9608	0.6327
0.9804	0.5918
0.9804	0.4082
0.9412	0.7755
0.8824	0.7755
0.9804	0.6327
0.1569	0.6327
0.9804	0.9592
0.2157	0.7755
0.7059	0.8776
0.9804	0.7959
0.9804	0.9796
0.5294	0.6735
0.9804	0.6735
0.5882	0.5918
0.7647	0.8367
0.9804	0.5510
0.5490	0.6939
0.9804	0.8571
0.9804	0.6939
0.9804	0.8163
0.3333	0.7755
0.1373	0.4694
0.7451	0.7143
0.0980	0.7755
0.2157	0.8163
0.5686	0.8776
0.9412	0.8163
0.9608	0.7959
0.6078	0.8980
0.1373	0.7551
0.7059	0.7347
0.7059	0.6939
0.7451	0.7959
0.9608	0.4898
0.9412	0.5306
0.9412	0.9388
0.9216	0.9796
0.9804	0.5714
0.1765	0.8163
0.9216	0.5306
0.9804	0.7551
0.9608	0.5306
0.1176	0.7347
-	0.8980
-	0.7755
-	-
0.9796	1.0000

1	3
0.4951	0.7551
0.4757	0.7551
0.4951	0.9184
0.3398	0.9796
0.4951	0.8163
0.4854	0.7755
0.4757	0.7959
0.4951	0.8776
0.4660	0.7551
0.4078	0.6939
0.4854	0.8571
0.0874	0.8571
0.4951	0.5918
0.1262	0.8163
0.3981	0.7755
0.4951	0.6122
0.4854	0.8571
0.2621	0.8163
0.4951	0.7755
0.3301	0.9592
0.3981	0.8980
0.4951	0.4898
0.2621	0.4490
0.4951	0.5918
0.4951	0.9184
0.4951	0.4490
0.1845	0.4286
0.0291	0.8367
0.3981	0.8571
0.0485	0.5918
0.1845	0.6735
0.3301	0.9592
0.4660	0.8163
0.4757	0.7347
0.3495	0.7755
0.0680	0.7755
0.3883	0.6122
0.3981	0.2449
0.3592	0.7347
0.4757	0.9184
0.4563	0.7959
0.4757	0.8163
0.4272	0.7959
0.4854	0.6531
0.0874	0.6122
0.4175	0.5306
0.4951	0.8367
0.4757	0.4898
0.0485	0.8571
-	0.8163
-	0.9592
-	0.8367
0.8776	1.0000

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0.0066	0.0204
0.0000	0.0000
0.0132	0.0204
0.0066	0.0000
0.0000	0.0000
0.0000	0.0204
0.0066	0.0000
0.0066	0.0000
0.0000	0.0000
0.0000	0.0000
0.0132	0.0204
0.0000	0.0000
0.0000	0.0000
0.0197	0.0000
0.0000	0.2245
0.0000	0.0000
0.0066	0.0000
0.0000	0.0000
0.0000	0.1429
0.0000	0.0000
0.0000	0.0000
0.0132	0.0000
0.0000	0.0204
0.0066	0.0000
0.0000	0.0000
0.0263	0.0000
0.0000	0.0000
0.0000	0.0408
0.0000	0.0000
0.0000	0.0204
0.0263	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0204
0.0000	0.0000
0.0000	0.0000
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0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0204
0.0000	0.0000
0.0132	0.0000
-	-
-	-
-	-
0.0000	0.0408

2	3
0.0000	0.0097
0.0577	0.0000
0.0000	0.0194
0.0000	0.0291
0.0000	0.0097
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0097
0.0000	0.0000
0.0000	0.0000
0.0000	0.0485
0.0385	0.0000
0.0000	0.0000
0.0769	0.0000
0.0000	0.0291
0.0577	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0962	0.0097
0.0000	0.0000
0.0385	0.0000
0.0000	0.0000
0.0962	0.0000
0.0000	0.0000
0.0000	0.1359
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0385	0.0000
0.0000	0.0194
0.0000	0.0000
0.0385	0.0000
0.0577	0.0097
0.0000	0.0097
0.0192	0.0971
0.0192	0.0000
0.0000	0.0097
0.0000	0.0097
0.0962	0.0000
0.2115	0.0000
0.1923	0.0000
0.0000	0.0194
0.0000	0.0000
0.0000	0.0291
0.0385	0.0097
0.0000	0.0000
0.0000	0.0000
0.0192	0.0000
0.0000	0.0874
-	0.0000
0.0392	0.0192

2	4
0.3960	0.0658
0.4158	0.2895
0.3663	0.3289
0.3960	0.3289
0.2871	0.3289
0.2871	0.3224
0.2871	0.3289
0.2079	0.3289
0.3069	0.3289
0.3069	0.3289
0.2970	0.0987
0.2871	0.3224
0.4356	0.3289
0.3267	0.3289
0.4059	0.3289
0.3564	0.3158
0.4356	0.0592
0.2970	0.1447
0.2871	0.2632
0.2772	0.0789
0.3960	0.0000
0.2772	0.3289
0.3762	0.0724
0.3960	0.0000
0.3366	0.3289
0.3366	0.2895
0.3267	0.3289
0.2376	0.3289
0.2871	0.3289
0.3564	0.0000
0.3762	0.0592
0.3960	0.3224
0.3366	0.0000
0.3465	0.3289
0.4257	0.1579
0.2970	0.0724
0.3069	0.3026
0.3069	0.2171
0.3663	0.3224
0.2277	0.3289
0.2772	0.2237
0.4257	0.2895
0.4356	0.0724
0.2871	0.1776
0.3564	0.0789
0.2772	0.1908
0.3465	0.3289
0.2673	0.3158
0.3069	0.3289
0.4158	-
0.3465	-
-	-
1.0000	0.7347

3	4
0.7347	0.1188
0.6735	0.4356
0.8163	0.5050
0.9184	0.5050
0.8163	0.5050
0.6939	0.4851
0.7551	0.4950
0.8163	0.5050
0.6735	0.5050
0.5918	0.4950
0.7959	0.1287
0.7143	0.4851
0.5918	0.5050
0.7551	0.4950
0.7347	0.5050
0.5918	0.4455
0.8163	0.0594
0.7143	0.2871
0.7551	0.4158
0.8367	0.0990
0.8980	0.0000
0.4694	0.4950
0.4898	0.1386
0.5918	0.0000
0.8163	0.4950
0.5102	0.4455
0.4490	0.4950
0.6939	0.4950
0.7959	0.4950
0.5918	0.0000
0.6122	0.0693
0.8980	0.4554
0.7551	0.0099
0.6327	0.4950
0.7551	0.2772
0.7347	0.0792
0.5714	0.4752
0.1837	0.3663
0.6327	0.4851
0.8163	0.4950
0.7143	0.3564
0.7551	0.4158
0.6939	0.1089
0.6122	0.3366
0.5714	0.1386
0.5102	0.3366
0.7755	0.5050
0.4694	0.4851
0.8367	0.5050
0.7347	-
0.8367	-
0.7347	-
1.0000	0.8367

1	2	3	4
0.0000	0.0980	0.0192	0.0000
0.0000	0.0588	0.0000	0.0000
0.0408	0.0000	0.0000	0.0000
0.0204	0.0392	0.0000	0.0000
0.0000	0.0000	0.0000	0.0204
0.0204	0.0980	0.0385	0.0000
0.0408	0.0196	0.0192	0.0000
0.0204	0.0000	0.0192	0.0408
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0408	0.0000	0.0385	0.0000
0.0204	0.0000	0.0000	0.0204
0.0000	0.0784	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0588	0.0000	0.0408
0.0408	0.0784	0.0192	0.0000
0.0000	0.0196	0.0192	0.0000
0.0000	0.0000	0.0000	0.0000
0.0204	0.0196	0.0962	0.0000
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0.0204	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
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0.0000	0.0196	0.0000	0.0000
0.0408	0.2941	0.0000	0.0612
0.0000	0.0980	0.0000	0.0000
0.0408	0.0000	0.0000	0.0000
0.0204	0.0196	0.0000	0.0000
0.0000	0.0196	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0196	0.0192	0.0000
0.0204	0.0196	0.0192	0.0408
0.0000	0.0588	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0204	0.0196	0.0962	0.0000
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0.0408	0.0000	0.0000	0.0000
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0.0000	0.0196	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0816	0.0588	0.0000	0.0000
0.0204	0.0000	0.2115	0.0000
0.0204	0.0000	0.0385	0.0000
0.0204	0.0000	0.0000	0.0612
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-	0.1569	0.0000	-
-	-	0.0385	-
0.040816326530612	0.0588235294117647	0.0192307692307692	0

1	2
0.4902	0.9796
0.8431	0.9184
0.8235	0.8571
0.8431	0.9796
0.3529	0.9796
0.7843	0.9796
0.8235	0.9796
0.8235	0.4490
0.4902	0.9388
0.9412	0.4286
0.8824	0.7143
0.6667	0.9184
0.8627	0.5102
0.7255	0.6122
0.8235	0.2041
0.7843	0.1837
0.9412	0.9796
0.8431	0.9184
0.7843	0.1837
0.9608	0.8776
0.9216	0.9796
0.7647	0.9184
0.6667	0.9796
0.7843	0.8776
0.9216	0.2245
0.8039	0.8980
0.8824	0.0000
0.7255	0.9796
0.6667	0.9796
0.7255	0.9592
0.8431	0.9796
0.8235	0.9184
0.7451	0.9796
0.8235	0.9796
0.8235	0.9592
0.7451	0.2653
0.7843	0.9796
0.9412	0.8776
0.9020	0.9796
0.7843	0.6939
0.8235	0.9592
0.7843	0.0816
0.7647	0.9796
0.7843	0.9592
0.6078	0.9796
0.7843	0.9592
0.8824	0.8980
0.9608	0.6735
0.9020	0.9592
-	1.0000
-	1.0000
-	-
1.0000	0.9608

1	3
0.0000	0.0204
0.0000	0.0000
0.0194	0.0000
0.0097	0.0000
0.0000	0.0000
0.0097	0.0612
0.0194	0.0204
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0291	0.0408
0.0097	0.0000
0.0000	0.0204
0.0000	0.0000
0.0000	0.0000
0.0194	0.0000
0.0000	0.0204
0.0000	0.0000
0.0000	0.1020
0.0485	0.0000
0.1456	0.0000
0.0000	0.0000
0.0000	0.0204
0.0000	0.0000
0.0097	0.0204
0.0000	0.0204
0.0194	0.0000
0.0000	0.0204
0.0097	0.0000
0.0000	0.0000
0.0000	0.0204
0.0000	0.0000
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0.0000	0.0000
0.0000	0.0000
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0.0000	0.0000
0.0000	0.1020
0.0000	0.0000
0.0000	0.0000
0.0000	0.0204
0.0000	0.0000
0.0000	0.0000
0.0291	0.0000
0.0000	0.2041
0.0097	0.0204
0.0000	0.0408
0.0097	0.0000
-	0.0408
-	0.0000
-	0.0204
0.0204	0.0577

1	4
0.2566	0.8980
0.2961	0.9796
0.2895	0.9796
0.2961	0.9796
0.2039	0.9796
0.2895	0.9796
0.2895	0.9796
0.2895	0.9796
0.2237	0.9796
0.3092	0.9796
0.3026	0.9796
0.2697	0.9796
0.3026	0.9796
0.2829	0.9796
0.2961	0.4286
0.2895	0.9796
0.3092	0.9796
0.2961	0.9184
0.2829	0.9796
0.3158	0.9388
0.3158	0.9184
0.2895	0.8776
0.2829	0.3469
0.2829	0.9796
0.3092	0.9184
0.3092	0.9796
0.3092	0.0612
0.2829	0.9592
0.2697	0.9796
0.2829	0.9796
0.2895	0.9796
0.2961	0.9796
0.2829	0.9796
0.2895	0.9796
0.3026	0.1633
0.2829	0.9592
0.2829	0.9796
0.3026	0.9796
0.3092	0.9796
0.2961	0.9592
0.2961	0.8776
0.2763	0.9796
0.2895	0.9796
0.2829	0.9388
0.2697	0.9796
0.2895	0.5714
0.3026	0.9184
0.3158	0.9796
0.3026	0.9796
-	-
-	-
-	-
1.0000	0.9796

2	3
0.9808	0.4563
0.9423	0.3883
0.8654	0.4369
0.9808	0.3689
0.9808	0.4466
0.9808	0.3883
0.9808	0.4272
0.4423	0.3689
0.9808	0.3883
0.5192	0.4466
0.6154	0.4175
0.9615	0.4272
0.5962	0.3495
0.6731	0.4369
0.1731	0.3301
0.1346	0.4563
0.9808	0.4660
0.9808	0.3981
0.1731	0.3689
0.9038	0.4563
0.9808	0.3883
0.8846	0.3883
0.9808	0.4272
0.9038	0.3689
0.2500	0.4466
0.8846	0.3204
0.0000	0.4660
0.9808	0.3592
0.9808	0.3981
0.9808	0.3689
0.9808	0.3301
0.9615	0.3981
0.9808	0.3495
0.9808	0.3010
0.9808	0.4078
0.2308	0.3883
0.9808	0.3786
0.8846	0.3592
0.9808	0.4078
0.6154	0.4078
0.9808	0.3204
0.0192	0.4078
0.9808	0.4175
0.9808	0.4078
0.9808	0.3592
0.9808	0.4369
0.9808	0.2718
0.5577	0.3107
0.9808	0.3592
0.9808	0.4466
0.9808	0.4660
-	0.4369
0.9608	1.0000

2	4
0.0099	0.0000
0.0099	0.0197
0.0000	0.0066
0.0000	0.0066
0.0000	0.0197
0.0198	0.0066
0.0000	0.0066
0.0000	0.0658
0.0000	0.0000
0.0000	0.0132
0.0000	0.0066
0.0000	0.0066
0.0297	0.0000
0.0000	0.0000
0.0297	0.0066
0.0099	0.0066
0.0000	0.0000
0.0000	0.0000
0.0099	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0099	0.0000
0.0000	0.0000
0.0000	0.0000
0.0099	0.0000
0.0099	0.0066
0.1980	0.0197
0.0000	0.0000
0.0000	0.0000
0.0000	0.0066
0.0000	0.0066
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0066
0.0396	0.0000
0.0000	0.0132
0.0000	0.0066
0.0000	0.0000
0.0099	0.0000
0.0000	0.0000
0.0396	0.0000
0.0000	0.0066
0.0000	0.0000
0.0000	0.0066
0.0000	0.0000
0.0000	0.0000
0.0099	0.0526
0.0000	0.0066
0.0000	-
0.0198	-
-	-
0.0196	0.0000

3	4
0.9388	0.4554
0.8776	0.5050
0.9388	0.5050
0.8980	0.5050
0.9592	0.5050
0.8980	0.5050
0.9592	0.5050
0.8980	0.5050
0.8776	0.5050
0.9388	0.5050
0.9388	0.5050
0.9388	0.5050
0.8367	0.5050
0.9388	0.5050
0.8571	0.3267
0.9388	0.5050
0.9592	0.5050
0.8980	0.4752
0.8776	0.5050
0.9388	0.5050
0.9388	0.5050
0.8980	0.4257
0.9388	0.2376
0.8571	0.5050
0.9388	0.5050
0.8367	0.5050
0.9796	0.0099
0.9184	0.5050
0.8980	0.5050
0.8980	0.5050
0.8571	0.5050
0.9388	0.5050
0.8571	0.5050
0.8163	0.5050
0.9592	0.0693
0.9184	0.5050
0.8980	0.5050
0.8776	0.5050
0.9592	0.5050
0.9184	0.5050
0.8571	0.4455
0.8980	0.5050
0.9184	0.5050
0.9184	0.4950
0.8980	0.5050
0.9796	0.2871
0.7755	0.5050
0.8163	0.5050
0.8980	0.5050
0.9592	-
0.9796	-
0.9388	-
1.0000	0.9592

Utrecht-Uithof

1	2	3	4	5
0.0408	0.0000	0.0000	0.0000	0.1373
0.0204	0.0980	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0204	0.0196	0.0000	0.0000	0.0196
0.0000	0.0000	0.1154	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0784
0.0204	0.0196	0.0000	0.0000	0.0588
0.0408	0.0000	0.0000	0.0000	0.0196
0.0000	0.0588	0.0000	0.0000	0.0000
0.0204	0.0196	0.0000	0.0000	0.0000
0.0000	0.0196	0.0962	0.0000	0.0000
0.0000	0.1961	0.0192	0.0000	0.0000
0.0408	0.0000	0.0962	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0196
0.2245	0.0000	0.0000	0.0000	0.0000
0.0000	0.0980	0.0385	0.0000	0.0000
0.0612	0.0196	0.0385	0.0000	0.0000
0.0000	0.0196	0.0769	0.0000	0.0000
0.0204	0.0000	0.0769	0.0000	0.0000
0.0000	0.0588	0.0000	0.0000	0.0196
0.0204	0.0000	0.0192	0.0000	0.0000
0.1633	0.0196	0.0000	0.0000	0.0000
0.0408	0.0196	0.0000	0.0000	0.0784
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0196	0.0000	0.0000	0.0000
0.0612	0.0000	0.0000	0.0000	0.0000
0.0204	0.0000	0.0192	0.0000	0.0000
0.0204	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0385	0.0000	0.0000
0.0816	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0196
0.0000	0.0000	0.0000	0.0000	0.0784
0.0204	0.0000	0.0000	0.0000	0.0784
0.0000	0.0196	0.0000	0.0000	0.0000
0.0000	0.0784	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0392	0.0000	0.0000	0.0000
0.0000	0.0980	0.1154	0.0000	0.0000
0.0408	0.0196	0.0000	0.0000	0.0000
0.0204	0.0196	0.0000	0.0204	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0204	0.0392	0.0000	0.0204	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0769	0.0000	0.0196
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0385	0.0000	0.0784
0.0000	0.0000	0.0000	0.0000	0.0000
-	0.0784	0.0000	-	0.0000
-	0.2157	0.0577	-	0.0000
-	-	0.0000	-	-
0.0408163265306122	0.0392156862745098	0.0384615384615385	0	0.0196078431372549

2	3
0.0000	0.0000
0.1154	0.0000
0.0000	0.0194
0.0000	0.0000
0.0385	0.0000
0.0000	0.0874
0.0000	0.0000
0.0385	0.0000
0.0000	0.0000
0.0577	0.0000
0.0385	0.0000
0.0000	0.1165
0.2500	0.0000
0.0000	0.0194
0.0000	0.0000
0.0000	0.0097
0.0577	0.0097
0.0000	0.0000
0.0577	0.0291
0.0000	0.0194
0.0000	0.0000
0.0000	0.0097
0.0385	0.0000
0.0000	0.0097
0.0000	0.0000
0.0385	0.0000
0.0000	0.0097
0.0577	0.0097
0.0000	0.0000
0.0000	0.0194
0.0000	0.0291
0.0000	0.0000
0.0000	0.0000
0.0000	0.0097
0.0000	0.0000
0.0000	0.0000
0.0385	0.0000
0.0000	0.0000
0.0000	0.0000
0.1538	0.0388
0.0192	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0583
0.0000	0.0000
0.0000	0.0388
0.0000	0.0000
0.0769	0.0194
0.1154	0.0291
-	0.0097
0.0784	0.0192

2	4
0.0000	0.0000
0.0396	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0132
0.0000	0.0000
0.0198	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0132
0.0891	0.0000
0.0000	0.0132
0.0000	0.0000
0.0000	0.0000
0.0396	0.0066
0.0000	0.0066
0.0099	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0197
0.0000	0.0000
0.0000	0.0329
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0198	0.0066
0.0000	0.0000
0.0000	0.0000
0.0099	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0594	0.0066
0.0099	0.0000
0.0000	0.0658
0.0000	0.0000
0.0000	0.0000
0.0099	0.0000
0.0000	0.0263
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	-
0.0099	-
-	-
0.0000	0.0000

3	4
0.0000	0.0000
0.0000	0.0099
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0408	0.0198
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0408	0.0000
0.0000	0.0000
0.0408	0.0099
0.0000	0.0198
0.0000	0.0000
0.0408	0.0000
0.0000	0.0000
0.1020	0.0000
0.0204	0.0000
0.0000	0.0000
0.0000	0.0198
0.0000	0.0000
0.0000	0.0198
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0204	0.0000
0.0000	0.0099
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0204	0.0000
0.0000	0.0000
0.0000	0.0000
0.1020	0.0000
0.0000	0.0000
0.0000	0.0594
0.0000	0.0000
0.0000	0.0297
0.0000	0.0000
0.0204	0.0198
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	-
0.0000	-
0.0000	-
0.0385	0.0000

1	2	3	4
0.0000	0.0000	0.0192	0.0204
0.0000	0.0000	0.0192	0.0000
0.0000	0.0000	0.0385	0.0204
0.0000	0.0196	0.0192	0.2857
0.0000	0.0000	0.0385	0.0000
0.0000	0.0000	0.0769	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0769	0.0000
0.0816	0.0000	0.0000	0.0204
0.0000	0.0000	0.0385	0.0000
0.0000	0.0196	0.0000	0.0000
0.0000	0.0000	0.0000	0.0204
0.0000	0.0196	0.0192	0.0204
0.0000	0.0000	0.0192	0.0408
0.0408	0.0000	0.1731	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0192	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.1224
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0588	0.0000	0.0000
0.0000	0.0000	0.0192	0.0204
0.0204	0.0000	0.0192	0.0000
0.0204	0.0000	0.0577	0.0000
0.0000	0.0000	0.0385	0.0000
0.0000	0.0000	0.0192	0.0000
0.0000	0.0000	0.0000	0.0204
0.0000	0.0000	0.0385	0.0408
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0408
0.0000	0.0000	0.0962	0.0000
0.0204	0.0000	0.0000	0.0000
0.0000	0.0000	0.3654	0.0408
0.0408	0.0000	0.0000	0.0204
0.0000	0.0196	0.0000	0.0204
0.0000	0.0196	0.0192	0.0000
0.0204	0.0000	0.0000	0.0612
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0385	0.0000
0.0000	0.0392	0.0000	0.0612
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0192	0.0000
0.0000	0.0000	0.0000	0.0408
0.0000	0.0000	0.0385	0.0204
-	0.0000	0.0000	-
-	0.0000	0.0000	-
-	-	0.0577	-
0	0	0.0384615384615385	0.0408163265306122

1	2
0.9608	0.7143
0.8039	0.9592
0.9608	0.9184
0.9608	0.9184
0.9608	0.9184
0.9608	0.9388
0.9608	0.8776
0.9608	0.9796
0.9804	0.8980
0.9608	0.9388
0.9804	0.9388
0.9608	0.7551
0.8431	0.9388
0.9608	0.8367
0.9608	0.9592
0.9608	0.9184
0.1961	0.9388
0.9608	0.9388
0.9412	0.7143
0.9608	0.9184
0.9608	0.9184
0.9608	0.9184
0.9608	0.9388
0.2353	0.9388
0.9608	0.9592
0.9608	0.9184
0.8235	0.9184
0.9804	0.9184
0.9608	0.9796
0.7843	0.9184
0.9608	0.9184
0.8824	0.9796
0.9608	0.9388
0.9608	0.9184
0.9608	0.9184
0.1961	0.9184
0.9412	0.9388
0.7451	0.8776
0.9608	0.9592
0.9020	0.9796
0.9804	0.9796
0.9804	0.0816
0.9608	0.7959
0.9608	0.8980
0.9216	0.8776
0.9608	0.8980
0.9608	0.8367
0.9608	0.7959
0.8431	0.9184
-	0.9592
-	0.9388
-	-
1.0000	0.9804

1	3
0.4951	0.9796
0.4369	0.9592
0.4951	0.9388
0.4951	0.7959
0.4757	0.9388
0.4757	0.9184
0.4951	0.8776
0.4951	0.9388
0.4951	0.9184
0.4951	0.9184
0.4951	0.9184
0.4951	0.9184
0.4272	0.9184
0.4660	0.9184
0.4951	0.9388
0.4951	0.9592
0.0971	0.9592
0.4951	0.9388
0.4660	0.9184
0.4951	0.9592
0.4951	0.5918
0.4951	0.9184
0.4951	0.9184
0.1359	0.9388
0.4951	0.9388
0.4951	0.6939
0.4466	0.9184
0.4951	0.7959
0.4951	0.9388
0.4466	0.6122
0.4951	0.9184
0.4660	0.9388
0.4951	0.9388
0.4757	0.9184
0.4951	0.9592
0.1165	0.9592
0.4757	0.9796
0.4272	0.9184
0.4757	0.9388
0.4660	0.9388
0.4951	0.9184
0.4951	0.9184
0.4951	0.9184
0.4951	0.9796
0.4660	0.9184
0.4951	0.9184
0.4951	0.9184
0.4951	0.9592
0.4466	0.9796
-	0.8571
-	0.9592
-	0.9388
0.9796	1.0000

1	4
0.0000	0.0000
0.0000	0.0000
0.0066	0.0408
0.0066	0.2245
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0204
0.0461	0.0000
0.0000	0.0204
0.0000	0.0000
0.0000	0.0000
0.0066	0.0000
0.0066	0.0000
0.0263	0.0000
0.0000	0.0000
0.0000	0.0204
0.0066	0.0000
0.0000	0.0612
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0408
0.0197	0.0000
0.0263	0.0000
0.0066	0.0000
0.0000	0.0000
0.0066	0.0204
0.0000	0.0000
0.0000	0.0000
0.0000	0.0204
0.0066	0.0000
0.0000	0.0000
0.0000	0.0204
0.0066	0.0000
0.0000	0.0000
0.0000	0.0000
0.0066	0.0612
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0204
0.0000	0.0000
0.0000	0.0000
0.0066	0.0204
0.0000	0.0000
-	-
-	-
-	-
0.0000	0.0204

2	3
0.0000	0.0000
0.0000	0.0000
0.0385	0.0000
0.0192	0.0000
0.0000	0.0097
0.0000	0.0000
0.0192	0.0000
0.0577	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0385	0.0000
0.0000	0.0000
0.0385	0.0097
0.0000	0.0000
0.0000	0.0777
0.0000	0.0000
0.0192	0.0000
0.0000	0.0097
0.0192	0.0000
0.0192	0.0000
0.0192	0.0000
0.0192	0.0000
0.0769	0.0000
0.0000	0.0000
0.0192	0.0000
0.0000	0.0194
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0192	0.0194
0.0192	0.0000
0.0192	0.0000
0.0385	0.0583
0.0000	0.0000
0.0000	0.1845
0.0000	0.0000
0.0192	0.0000
0.0000	0.0097
0.0385	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.1154	0.0000
0.0577	0.0000
0.0000	0.0000
0.0385	0.0000
0.0192	0.0000
0.0000	0.0000
0.0192	0.0000
-	0.0097
0.0196	0.0192

2	4
0.3663	0.3224
0.4653	0.3224
0.4455	0.2763
0.4455	0.0461
0.4455	0.2961
0.4554	0.3224
0.4158	0.3224
0.4554	0.3224
0.4257	0.3224
0.4554	0.3092
0.4554	0.3224
0.3960	0.3026
0.4554	0.3224
0.4158	0.3224
0.4653	0.3289
0.4554	0.3289
0.4257	0.3224
0.4554	0.3224
0.3564	0.1184
0.4356	0.3224
0.4455	0.0066
0.4356	0.3224
0.4356	0.3224
0.4356	0.3224
0.4554	0.3092
0.4554	0.2171
0.4455	0.3224
0.4356	0.3224
0.4653	0.3224
0.4356	0.3224
0.4257	0.3224
0.4554	0.3289
0.4554	0.3224
0.4356	0.3224
0.4455	0.3224
0.4257	0.3289
0.4455	0.3224
0.4257	0.3224
0.4653	0.3026
0.4752	0.1447
0.4554	0.3289
0.0693	0.3289
0.4158	0.3092
0.4257	0.3158
0.4158	0.3289
0.4257	0.3224
0.4158	0.3224
0.4059	0.3289
0.4455	0.3224
0.4653	-
0.4554	-
-	-
0.9804	0.9592

3	4
0.9388	0.5050
0.9592	0.4752
0.9388	0.4455
0.8571	0.0990
0.9184	0.4752
0.8980	0.5050
0.8571	0.5050
0.9184	0.5050
0.8776	0.5050
0.8980	0.4752
0.8980	0.5050
0.8980	0.4554
0.8980	0.4950
0.8980	0.5050
0.9388	0.5050
0.9592	0.5050
0.9592	0.4851
0.9388	0.4851
0.9184	0.2079
0.9592	0.5050
0.5918	0.0198
0.9184	0.5050
0.8980	0.4752
0.9388	0.5050
0.9388	0.4950
0.6939	0.4356
0.8980	0.4752
0.8367	0.5050
0.9388	0.5050
0.5102	0.5050
0.8980	0.5050
0.9184	0.5050
0.8980	0.4752
0.8980	0.5050
0.9796	0.4950
0.9388	0.4851
0.9796	0.5050
0.9388	0.5050
0.9388	0.4554
0.9592	0.2574
0.9388	0.5050
0.8776	0.5050
0.9388	0.4851
0.9388	0.4752
0.8980	0.5050
0.8980	0.5050
0.8980	0.4752
0.9388	0.5050
0.9388	0.5050
0.8571	-
0.9592	-
0.9388	-
1.0000	0.9592

2	3	4	5
0.0000	0.0000	0.0408	0.0196
0.0000	0.0000	0.0000	0.0000
0.0196	0.0000	0.0000	0.0000
0.0000	0.0233	0.0000	0.0000
0.0000	0.0233	0.0000	0.0000
0.0000	0.0930	0.0000	0.0196
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0233	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0588
0.0196	0.0233	0.0000	0.0000
0.0196	0.0233	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0784
0.0000	0.0465	0.0000	0.0196
0.0000	0.0698	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0465	0.0000	0.0196
0.0196	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0196	0.0000	0.0000	0.0784
0.0392	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.1163	0.0000	0.0196
0.0000	0.0233	0.0000	0.0196
0.0980	0.0000	0.0000	0.0000
0.0000	0.0233	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.1569
0.0000	0.0000	0.0000	0.0000
0.0000	0.1395	0.0204	0.0000
0.0196	0.1163	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0196
0.0392	0.0233	0.0000	0.0000
0.0196	0.0233	0.0000	0.0392
0.0000	0.0000	0.0000	0.0000
0.0000	0.0698	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0465	0.0000	0.0000
0.0000	0.2558	0.0000	0.0196
0.0784	-	0.0000	0.0000
0.0000	-	0.0204	0.0000
0.0000	-	0.0000	0.0392
0.0000	-	0.0408	0.0000
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0.0000	-	0.0000	0.0000
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0.0000	0.0000
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0.0000	0.0000
0.0000	0.0784
0.0000	0.0588
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0.0000	0.0000
0.0000	0.0000
0.0233	0.0000
0.0233	0.0000
0.0233	0.0000
0.0465	0.0000
0.0465	0.0000
0.0000	0.0000
0.0698	0.0000
0.0233	0.0392
0.0465	0.0196
0.0000	0.0000
0.0000	0.0196
0.0465	0.0000
0.0233	0.0000
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0.0465	0.0196
0.0000	0.0000
0.0000	0.0000
0.0233	0.0392
0.0000	0.0000
0.0000	0.0784
0.0465	0.0392
0.0000	0.0000
0.0233	0.0000
0.1163	0.0000
0.0465	0.0000
0.0233	0.0000
0.0000	0.0000
0.0000	0.0000
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0.0000	0.3725
0.1163	-
0.0930	-
0.0000	-
0.0233	-
0.0000	-
0.0000	-
0.0000	-
0.0000	-
-	-
0.0392	0.0465

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0.5217	0.8824
0.5217	0.7647
0.5217	0.8824
0.5217	0.8627
0.5217	0.8824
0.5000	0.9020
0.5217	0.8824
0.5217	0.8627
0.5109	0.8824
0.5217	0.8824
0.5217	0.8627
0.5217	0.9216
0.5217	0.8039
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0.5217	0.8627
0.5217	0.8824
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0.4783	0.8824
0.5217	0.8824
0.0652	0.9020
0.5217	0.8824
0.5109	0.8627
0.5109	0.8627
0.0109	0.9020
0.4891	0.7059
0.5217	0.9216
0.5217	0.8824
0.5217	0.9020
0.5217	0.8824
0.5217	0.8627
0.5217	0.8627
0.5217	0.8627
0.5217	0.8824
0.3478	0.9216
0.5109	0.9020
0.5217	0.8824
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0.1196	0.8824
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0.5109	0.8431
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0.5109	0.9020
0.5217	0.8824
0.5217	0.9020
0.5217	0.8627
0.5217	0.9804
0.5217	0.8824
0.5217	0.9412
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0.5326	-
-	-
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0.9388	0.3370
0.9796	0.3913
0.9796	0.3478
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0.9388	0.3587
0.6122	0.3587
0.0816	0.3696
0.9592	0.3370
0.9796	0.3370
0.9796	0.4130
0.9592	0.3152
0.9592	0.4022
0.7755	0.3587
0.9796	0.3804
0.1837	0.4130
0.9796	0.3913
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0.9796	0.3478
0.9796	0.3478
0.9796	0.3804
0.8980	0.2283
0.9796	0.3913
0.9592	0.3804
0.9592	0.4130
0.9388	0.3696
0.9796	0.3696
0.9796	0.3696
0.3673	0.3913
0.0000	0.4130
0.1429	0.4239
0.9796	0.4130
0.9796	0.3804
0.9592	0.3261
0.9184	0.3587
0.6122	0.3913
0.9796	0.3043
0.9796	0.3696
0.9796	0.3913
0.9796	0.4022
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-	0.4239
-	0.3478
-	0.4457
-	0.4022
-	0.4239
-	-
-	-
-	-
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0.4900	0.2797
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0.5000	0.2797
0.5000	0.2797
0.5000	0.2727
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0.5000	0.2867
0.5000	0.2727
0.5000	0.2867
0.5000	0.2867
0.5000	0.2587
0.4900	0.2727
0.0200	0.2587
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0.5000	0.2867
0.5000	0.2867
0.5000	0.2867
0.5000	0.2867
0.5000	0.2867
0.5000	0.2797
0.5000	0.2797
0.5000	0.2797
0.5000	0.2867
0.5000	0.2867
0.5000	0.2937
0.5000	0.2867
0.5000	0.2867
0.4900	0.2867
0.5000	0.2797
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-	0.2867
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-	0.3007
-	0.2937
-	-
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1	2	3	5
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0.0000	0.0000	0.1600	0.0000
0.0000	0.0208	0.0200	0.0392
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0.0000	0.0000	0.0400	0.0000
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0.0000	0.0833	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0200	0.0000
0.0000	0.0833	0.4400	0.0000
0.0000	0.0833	0.0000	0.0392
0.0000	0.0625	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0400	0.0000
0.0000	0.0000	0.0000	0.0196
0.0000	0.0000	0.0600	0.0588
0.0000	0.2292	0.0400	0.0000
0.0000	0.0208	0.0000	0.0000
0.0000	0.0208	0.0200	0.0000
0.0000	0.0208	0.0600	0.0000
0.0000	0.0000	0.0200	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0208	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0417	0.0200	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0417	0.0000	0.0000
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0.0204	0.0000	0.0000	0.0000
0.0000	0.1042	0.0000	0.0000
0.0000	0.0417	0.0400	0.0000
0.0000	0.0000	0.0000	0.0588
0.0000	0.2708	0.0000	0.0000
0.0000	0.0000	0.0200	0.0980
0.0000	0.0000	0.0000	0.0000
0.0000	0.0208	0.0200	0.0588
0.0000	0.0208	0.0000	0.0000
0.0000	0.2083	0.0200	0.0392
0.0408	0.0000	0.0400	0.0000
0.0204	0.0208	0.0000	0.0000
0.0000	0.0208	0.0000	0.0000
0.0000	0.2500	0.0000	0.0000
0.0000	0.0000	0.0200	0.0000
0.0000	0.0000	0.0400	0.0000
0.0000	0.0625	0.0200	0.0000
0.0000	0.0000	0.0200	0.0000
0.0204	0.0625	0.0000	0.0000
0.0000	0.0625	0.0200	0.0000
0.0204	-	0.0000	0.0000
-	-	0.0200	0.0588
-	-	-	0.0000
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0.0000	0.0816
0.0200	0.0000
0.0000	0.0000
0.0000	0.0204
0.0000	0.0102
0.0800	0.0306
0.0200	0.0102
0.0200	0.0102
0.0600	0.1939
0.0400	0.0306
0.0000	0.0306
0.0000	0.0306
0.0000	0.0204
0.0200	0.0000
0.0000	0.0102
0.3200	0.0204
0.0200	0.0000
0.0000	0.0102
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0.0600	0.0102
0.0000	0.0000
0.0000	0.0000
0.0000	0.0510
0.0000	0.0306
0.0800	0.0204
0.0000	0.0408
0.0200	0.0102
0.2400	0.0306
0.0000	0.0000
0.0000	0.0000
0.0200	0.0102
0.0400	0.0000
0.2200	0.0408
0.0000	0.0102
0.0400	0.0000
0.0000	0.0000
0.4200	0.0102
0.0000	0.0000
0.0400	0.0306
0.0000	0.0102
0.0200	0.0306
0.0200	0.0000
0.0000	0.0204
-	0.0102
-	0.0204
-	-
-	-
0.0833	0.0200

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0.4554	0.2617
0.4851	0.2886
0.4950	0.2886
0.4950	0.2886
0.4950	0.2685
0.4950	0.2752
0.0297	0.2483
0.4752	0.2819
0.4653	0.2819
0.4950	0.2886
0.0297	0.2953
0.4752	0.2819
0.4653	0.2752
0.4950	0.2215
0.3762	0.2819
0.4752	0.2819
0.4950	0.2617
0.4950	0.2819
0.4158	0.2953
0.4950	0.2685
0.4950	0.2819
0.4752	0.2886
0.4950	0.2685
0.4950	0.2550
0.4950	0.2617
0.4257	0.2752
0.3168	0.2282
0.4950	0.2819
0.4554	0.2886
0.0594	0.2886
0.4950	0.2819
0.4950	0.2953
0.0000	0.3020
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0.4554	0.2013
0.4950	0.2081
0.4950	0.2550
0.4950	0.2752
0.4950	0.2819
0.4950	0.2819
0.1188	0.2685
0.4950	0.2819
0.4950	0.2819
0.4950	0.2148
0.4950	0.2819
0.4950	0.2886
0.4455	0.2819
0.3069	0.2416
-	0.3154
-	0.2685
-	0.3020
-	-
0.9167	1.0000

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0.7647	0.2970
0.0980	0.4257
0.9804	0.4455
0.6863	0.4257
0.9804	0.3564
0.9804	0.4158
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0.9804	0.3861
0.0000	0.4356
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0.8824	0.3465
0.9804	0.2376
0.5098	0.4158
0.9804	0.3861
0.9804	0.3069
0.9804	0.4158
0.9804	0.4356
0.9804	0.4257
0.9804	0.4257
0.9804	0.4059
0.9020	0.3465
0.6471	0.3267
0.9804	0.4059
0.8627	0.3663
0.2157	0.2970
0.0000	0.3960
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0.0000	0.4059
0.9804	0.3861
0.8431	0.4356
0.9412	0.4356
0.9804	0.4554
0.7451	0.2376
0.9804	0.2277
0.8824	0.3366
0.8235	0.3762
0.9804	0.4455
0.9608	0.3762
0.4510	0.3960
0.8431	0.3762
0.9804	0.4158
0.9804	0.2574
0.8627	0.3564
0.8627	0.4257
0.9804	0.3861
0.7255	0.2871
0.9216	0.4554
0.9804	0.3465
-	0.4455
-	-
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0.0408	0.0200
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0.0612	0.0200
0.0204	0.0000
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0.0000	0.0200
0.0204	0.0200
0.0204	0.0000
0.0408	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0612	0.0000
0.0000	0.0000
0.0204	0.0000
0.0000	0.0000
0.0000	0.0000
0.0408	0.0000
0.1429	0.0000
0.0000	0.0000
0.0000	0.0000
0.0204	0.0400
0.0816	0.0000
0.0612	0.0200
0.0408	0.0000
0.0000	0.0200
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.1020	0.0800
0.0612	0.0000
0.0000	0.0000
0.0816	0.0000
0.0204	0.0000
0.0000	0.0000
0.4490	0.0000
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0.9800	0.9796
0.9800	0.9592
0.9800	0.9796
0.9800	0.9388
0.9800	0.9592
0.9800	0.9796
0.9800	0.9388
0.9800	0.9796
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0.9800	0.9796
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0.9800	0.9592
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0.9800	0.9592
0.9800	0.9388
0.9800	0.9184
0.2400	0.9796
0.8800	0.9388
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-	-
-	-
1.0000	1.0000

1	3	4	5
0.0204	0.0000	0.0816	0.0000
0.0204	0.0222	0.0000	0.0196
0.0408	0.0222	0.0000	0.0196
0.0408	0.0667	0.0000	0.0196
0.1020	0.0222	0.0000	0.0000
0.0204	0.0000	0.0000	0.0000
0.0408	0.0667	0.0000	0.0196
0.0816	0.0222	0.0000	0.0196
0.0204	0.0000	0.0000	0.0000
0.0612	0.0000	0.0000	0.0000
0.0408	0.0444	0.0204	0.0000
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0.0408	0.0000	0.0612	0.0196
0.0204	0.0222	0.0000	0.0000
0.1020	0.0444	0.0000	0.0000
0.0204	0.0000	0.0000	0.0000
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0.0204	0.0000	0.0000	0.0000
0.0816	0.0444	0.0000	0.0000
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0.0408	0.0444	0.0000	0.0000
0.0612	0.0444	0.0000	0.0000
0.0204	0.0444	0.0000	0.0196
0.0612	0.0222	0.0000	0.0000
0.0612	0.0222	0.0000	0.0000
0.0000	0.0222	0.0204	0.0000
0.4082	0.0000	0.0000	0.0000
0.0408	0.0000	0.0000	0.0000
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0.0204	0.0222	0.0000	0.0000
0.0408	0.0222	0.0000	0.0000
0.0408	0.0222	0.0000	0.0392
0.0204	0.0222	0.0612	0.0000
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0.0204	-	0.0000	0.0000
0.1429	-	0.0000	0.0196
0.0408	-	0.0000	0.0196
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0.0222	0.5918
0.9333	0.5102
0.8444	0.5306
0.9778	0.3878
0.0222	0.5510
0.0000	0.5918
0.9333	0.4694
0.0000	0.5510
0.6667	0.5918
0.6667	0.4490
0.0222	0.5102
0.9778	0.7347
0.0444	0.6122
0.9778	0.5714
0.0222	0.5306
0.0222	0.5306
0.6000	0.5714
0.0444	0.6122
0.9778	0.4286
0.9333	0.4286
0.9556	0.3878
0.9778	0.6531
0.9333	0.3061
0.9778	0.6939
0.9778	0.6531
0.4444	0.6531
0.0222	0.6531
0.7333	0.6327
0.9778	0.6531
0.9778	0.6327
0.0000	0.5510
0.9778	0.6939
0.0444	0.6531
0.2444	0.5918
0.0222	0.5714
0.9556	0.5918
0.2222	0.5510
0.8000	0.3878
0.6444	0.6531
0.9778	0.5714
0.9778	0.5918
0.0889	0.5918
0.2667	0.7755
1.0000	-
0.3556	-
1.0000	-
1.0000	-
-	-
-	-
-	-
0.6939	1.0000

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0.0106	0.5102
0.1596	0.5306
0.0106	0.5510
0.4362	0.3061
0.4149	0.4694
0.4894	0.5714
0.0000	0.6939
0.0000	0.5918
0.4681	0.5102
0.0000	0.4898
0.2340	0.6735
0.2553	0.4286
0.0000	0.3673
0.5000	0.4286
0.0106	0.4286
0.5106	0.4694
0.0319	0.5102
0.0106	0.7551
0.2766	0.4490
0.0000	0.6531
0.5106	0.1633
0.4574	0.6327
0.4255	0.4898
0.5000	0.3878
0.4362	0.1020
0.5106	0.6939
0.4787	0.6735
0.2021	0.5918
0.0319	0.5102
0.3085	0.3469
0.4787	0.4490
0.5106	0.6531
0.0213	0.7551
0.5000	0.4694
0.0851	0.5510
0.1064	0.7347
0.0000	0.2857
0.4894	0.3061
0.1489	0.4490
0.3191	0.4490
0.2660	0.4694
0.4894	0.5714
0.4574	0.5306
0.0532	0.7143
0.1596	0.6735
0.5000	0.8571
0.1489	0.6735
0.5106	0.5510
0.4894	0.6122
-	-
-	-
-	-
0.6939	1.0000

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0.3448	0.9388
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0.3448	0.9388
0.3448	0.9388
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0.3448	0.9592
0.3448	0.9388
0.3448	0.9592
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0.3448	0.9592
0.3448	0.9388
0.3448	0.9388
0.0069	0.9796
0.3448	0.9592
0.3448	0.9592
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0.3448	0.9592
0.3448	0.9592
0.3448	0.8980
0.3379	0.9388
0.3448	0.9796
0.3448	0.9592
0.3448	0.9388
0.3448	0.9592
0.3448	0.9592
0.3448	0.9592
0.3448	0.9592
0.2069	0.9592
0.3448	0.9592
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0.3448	0.9592
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0.3448	0.9592
0.3448	0.9592
0.3448	0.9592
0.3448	0.9592
0.3448	0.9388
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0.3379	0.9592
0.3448	0.9388
-	0.9796
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-	-
0.9796	1.0000

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0.0000	0.0106
0.0204	0.0106
0.1224	0.0106
0.0000	0.0000
0.0000	0.0319
0.0000	0.0000
0.0000	0.0000
0.0000	0.0106
0.0000	0.0106
0.0000	0.0319
0.0000	0.0213
0.0000	0.0106
0.1633	0.0000
0.0000	0.0000
0.0000	0.0106
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0.0000	0.0000
0.0612	0.0213
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0.0000	0.0319
0.0000	0.0213
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0.0000	0.0319
0.0000	0.0106
0.0000	0.0106
0.0000	0.0000
0.0000	0.0106
0.0000	0.0213
0.0000	0.0319
0.0204	0.0000
0.0204	0.0106
0.0000	0.0106
0.1224	0.0000
0.0000	0.0000
0.0000	0.0213
0.0000	0.0000
0.0000	0.0000
0.0000	0.0319
0.0000	0.0213
0.3469	0.0319
0.4898	0.0000
-	0.0532
-	0.0106
-	0.0106
-	0.0106
-	-
-	-
-	-
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0.0000	0.0217
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0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0417	0.0000
0.2083	0.0000
0.0000	0.0000
0.0625	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0217
0.0000	0.0000
0.0000	0.0000
0.0417	0.0000
0.0000	0.0000
0.0000	0.0000
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0.0000	0.0000
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0.0208	0.0000
0.0417	0.0000
0.0208	0.0000
0.0208	0.0000
0.0000	0.0435
0.0208	0.0000
0.0417	0.0000
0.0417	0.0435
0.0000	0.0000
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0.0208	0.0000
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0.0208	0.0000
0.0000	0.0000
0.0417	-
0.0000	-
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0.0000	0.0625
0.0000	0.0000
0.0000	0.0000
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0.0000	0.0208
0.0000	0.0000
0.1087	0.0000
0.0000	0.0000
0.0435	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0217	0.0000
0.0000	0.0208
0.0217	0.0000
0.0000	0.0000
0.0217	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
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0.0000	0.1667
0.0000	0.0000
0.0652	0.0000
0.0217	0.0208
0.0000	0.0000
0.0000	0.0208
0.0000	0.0208
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0217	0.0000
0.0217	0.0000
0.0000	0.0208
0.0000	0.0000
0.0000	0.0000
0.0000	-
0.0000	-
-	-
-	-
-	-
-	-
0.0208	0.0217

2	3	5
0.0196	0.0000	0.0000
0.0000	0.0385	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0192	0.0000
0.0196	0.0000	0.0000
0.0000	0.0577	0.0000
0.0392	0.1731	0.0000
0.0784	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0385	0.0000
0.0000	0.0000	0.0000
0.0000	0.0577	0.0000
0.0000	0.0192	0.0000
0.0000	0.0385	0.0000
0.0784	0.1923	0.0000
0.0000	0.0000	0.0000
0.0000	0.0192	0.0000
0.0000	0.0577	0.0000
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0.0196	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0577	0.0000
0.0000	0.0000	0.0000
0.0000	0.0192	0.0000
0.0588	0.0192	0.0000
0.0196	0.3462	0.0000
0.0000	0.0192	0.0000
0.0196	0.0385	0.0000
0.0000	0.0385	0.0000
0.0000	0.0769	0.0000
0.0000	0.0385	0.0000
0.0784	0.0192	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0392	0.0192	0.0000
0.0000	0.0000	0.0000
0.0000	0.0769	0.0000
0.1569	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0192	0.0000
0.0784	0.0192	0.0000
-	0.0577	-
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2	3
0.0385	0.0000
0.0385	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0577	0.0000
0.0385	0.0000
0.0385	0.2157
0.1538	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0385	0.0000
0.0577	0.0000
0.0192	0.0000
0.0192	0.0196
0.0000	0.0000
0.0192	0.0000
0.0000	0.0000
0.0192	0.0000
0.0192	0.2745
0.0192	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0784
0.0385	0.0000
0.0192	0.0000
0.0192	0.0196
0.0000	0.0196
0.0000	0.0000
0.0769	0.0196
0.0000	0.4902
0.0000	0.0000
0.0192	0.0196
0.0385	0.0000
0.0577	0.0000
0.0000	0.0000
0.1154	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0196
0.0769	0.0392
0.0577	0.0000
0.0192	0.0196
0.0962	0.0000
0.0577	0.0000
0.0192	0.0000
0.0000	0.0000
0.0192	0.0196
-	0.0784
0.0392	0.0577

2	3
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0.0667	0.0000
0.0222	0.0000
0.0000	0.0000
0.2000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
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0.0000	0.0000
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0.0444	0.0000
0.0000	0.0000
0.0667	0.0000
0.0000	0.0000
0.0444	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0667	0.0000
0.0667	0.0000
0.1556	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0444	0.0000
0.0889	0.0192
0.0222	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0192
0.0000	0.0000
0.0889	0.0000
0.0000	0.0000
-	0.0000
-	0.0192
-	0.0000
-	0.0000
-	0.0000
-	0.0769
-	0.0000
0.0666666666666667	0

2	3
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0192	0.1111
0.3269	0.0000
0.0000	0.0667
0.0192	0.0000
0.0000	0.0000
0.0769	0.0444
0.0000	0.0000
0.0000	0.0000
0.0000	0.0444
0.0000	0.0000
0.3654	0.0000
0.0000	0.0222
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0962	0.0889
0.0000	0.0000
0.0000	0.0000
0.0000	0.0889
0.0000	0.0000
0.0000	0.0000
0.0000	0.0667
0.0000	0.0000
0.0000	0.0667
0.0000	0.0000
0.0000	0.0000
0.2500	0.0444
0.0000	0.0000
0.0385	0.1111
0.0000	0.0000
0.0192	0.0000
0.0000	0.0667
0.0000	0.0000
0.0000	0.0667
0.0000	0.0000
0.0192	0.0000
0.0000	0.0667
0.0000	0.0889
0.0385	0.0000
0.0000	0.0222
0.0000	0.0444
0.0000	0.0000
-	0.0000
-	0.0000
-	0.0000
-	0.0000
-	0.0000
-	0.0000
-	0.2222
-	0.1333
0.0667	0.0769

Enschede

1	2	3	5
0.0000	0.0392	0.0000	0.1765
0.0000	0.0000	0.0784	0.0000
0.0217	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0392
0.0000	0.0000	0.0000	0.0392
0.0217	0.0588	0.0000	0.0000
0.0000	0.0000	0.0196	0.0000
0.0000	0.0000	0.0196	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0196
0.0000	0.0392	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0217	0.0000	0.0000	0.0000
0.2391	0.0000	0.0000	0.0000
0.0217	0.0000	0.0000	0.0392
0.0217	0.0392	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0784
0.0000	0.0000	0.0392	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0392
0.0000	0.0196	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0196
0.0000	0.0000	0.0196	0.0000
0.0000	0.0000	0.0000	0.0000
0.0435	0.0000	0.0000	0.0000
0.0000	0.0196	0.0000	0.0000
0.0435	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0196
0.0217	0.0196	0.0000	0.0196
0.0217	0.0000	0.0196	0.0000
0.0000	0.0000	0.0196	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0588	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0392	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0217	0.0000	0.0000	0.0000
0.0217	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0392
0.0435	0.0196	0.0000	0.0000
-	0.0000	0.0000	0.0000
-	0.0000	0.0392	0.0000
-	0.0000	0.0196	0.0000
-	0.0000	0.1176	0.0000
-	0.0000	0.0000	0.0196
0.0217391304347826	0	0.0196078431372549	0.0196078431372549

1	2
0.4510	0.4783
0.6471	0.4565
0.0000	0.4130
0.1765	0.4348
0.9412	0.2391
0.0196	0.3913
0.8039	0.3696
0.0196	0.6522
0.1569	0.3696
0.9412	0.3696
0.0000	0.1957
0.9804	0.3478
0.8039	0.4565
0.1765	0.4783
0.0000	0.5000
0.9804	0.5435
0.0000	0.4348
0.3137	0.5435
0.0000	0.3913
0.0980	0.6087
0.0392	0.3478
0.9216	0.6304
0.8627	0.4348
0.3922	0.5652
0.7255	0.0870
0.9412	0.4565
0.0196	0.6087
0.9020	0.3696
0.0196	0.3696
0.0000	0.4130
0.8824	0.6304
0.0000	0.4348
0.1176	0.3913
0.2353	0.5435
0.0784	0.1522
0.0000	0.5435
0.9804	0.3043
0.8431	0.0870
0.1765	0.2609
0.3137	0.4565
0.1176	0.5000
0.5882	0.4130
0.0000	0.3261
0.9216	0.3478
0.8431	0.3478
0.9804	0.4565
-	0.5435
-	0.4565
-	0.4130
-	0.5435
-	0.4130
-	-
0.6522	0.9608

3	5
0.0000	0.0882
0.1176	0.0000
0.0196	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0098
0.0000	0.0196
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0.0000	0.0000
0.0588	0.0000
0.0196	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0196	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0686
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0588	0.0098
0.0000	0.0000
0.0000	0.0000
0.0000	0.0098
0.0196	0.0196
0.0000	0.0000
0.0000	0.0000
0.0000	0.0098
0.0000	0.0000
0.0000	0.0588
0.0000	0.0098
0.0196	0.0000
0.0588	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0098
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0588	0.0098
0.0000	0.0000
0.0000	0.0098
0.0784	0.0000
0.0392	0.0098
0.1176	0.0000
0.0000	0.0000
-	-
0.0392	0.0000

Hengelo

1	2	5
0.0000	0.0000	0.0000
0.0217	0.0000	0.0000
0.0000	0.0417	0.0000
0.0217	0.0208	0.0000
0.0000	0.0000	0.0000
0.0217	0.0208	0.0000
0.1087	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0435	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0217	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0213
0.0000	0.0000	0.0000
0.0000	0.0208	0.0000
0.0000	0.0208	0.0000
0.0000	0.0208	0.0000
0.0000	0.0208	0.0000
0.0000	0.0208	0.0000
0.0000	0.0208	0.0000
0.0000	0.0208	0.0000
0.0000	0.0208	0.0000
0.0000	0.0208	0.0000
0.0217	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0417	0.0000
0.0000	0.0000	0.0000
0.1087	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0435	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0208	0.0000
0.0000	0.0208	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0217	0.0000	0.0000
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0.0000	0.2500	0.0213
0.0000	0.0000	0.0000
0.0000	0.0000	0.0213
0.0000	0.0208	0.0000
0.0000	0.0000	0.0000
-	0.0625	0.0000
-	0.0208	-
0.0434782608695652	0.0208333333333333	0

1	2
0.0000	0.0000
0.0208	0.0000
0.0208	0.0435
0.0000	0.0217
0.0208	0.0000
0.0417	0.0000
0.1042	0.0000
0.0000	0.0000
0.0000	0.0000
0.0833	0.0000
0.0208	0.0000
0.0208	0.0000
0.0000	0.0000
0.0833	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0208	0.0000
0.0000	0.0217
0.0208	0.0435
0.0000	0.0435
0.0000	0.0000
0.0208	0.0000
0.0000	0.0000
0.0000	0.0217
0.0208	0.0000
0.0208	0.0000
0.0000	0.1087
0.0000	0.0217
0.1875	0.0000
0.0000	0.0000
0.0000	0.0000
0.0417	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0652
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0435
0.0000	0.1957
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0217
-	0.0870
-	0.0435
-	-
-	-
-	-
-	-
0.0435	0.0417

Nijmegen

1	2	3	4	5
0.2500	0.0222	0.0000	0.0000	0.0600
0.3542	0.0222	0.0000	0.0000	0.1000
0.0000	0.0222	0.0000	0.0000	0.1000
0.0208	0.0000	0.0000	0.0000	0.0000
0.0208	0.0222	0.0000	0.0000	0.0000
0.0625	0.0222	0.0385	0.0000	0.0200
0.0625	0.0000	0.0000	0.0000	0.0000
0.0208	0.0000	0.1346	0.0000	0.0000
0.0208	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0800
0.3333	0.0889	0.0192	0.0000	0.0400
0.0000	0.0222	0.0192	0.0000	0.0000
0.0208	0.0000	0.0577	0.0000	0.0200
0.0208	0.1556	0.0000	0.0000	0.0400
0.0000	0.0000	0.0000	0.0000	0.1800
0.0625	0.0222	0.0000	0.0000	0.0800
0.0625	0.1556	0.0000	0.0000	0.0000
0.0417	0.0000	0.0000	0.0000	0.0000
0.0208	0.0000	0.0000	0.0000	0.1000
0.0625	0.0222	0.0000	0.0000	0.0000
0.0000	0.0222	0.0192	0.0000	0.0800
0.0000	0.0222	0.0192	0.0000	0.0200
0.0000	0.0000	0.0000	0.0000	0.2800
0.2083	0.0000	0.0000	0.0000	0.0000
0.0208	0.0000	0.0000	0.0204	0.2600
0.0000	0.0222	0.1154	0.0000	0.1200
0.2500	0.0000	0.0385	0.0000	0.0000
0.0000	0.4222	0.1346	0.0000	0.0000
0.0208	0.0222	0.0000	0.0000	0.0000
0.0417	0.0222	0.0000	0.0000	0.1200
0.0833	0.2000	0.0000	0.0000	0.0800
0.0625	0.0222	0.0192	0.0000	0.0000
0.0625	0.0667	0.0000	0.0000	0.0000
0.0625	0.0000	0.0000	0.0000	0.0400
0.0417	0.0222	0.0000	0.0000	0.0200
0.0208	0.0444	0.0000	0.0000	0.0000
0.0833	0.0444	0.0000	0.0612	0.0400
0.2292	0.0444	0.0000	0.0000	0.0000
0.0625	0.0667	0.0000	0.0000	0.0000
0.0000	0.0000	0.0192	0.0000	0.0600
0.0000	0.0222	0.0000	0.0000	0.0000
0.0417	0.0222	0.0577	0.0000	0.0000
0.0000	0.0444	0.0000	0.0000	0.2800
0.0000	0.1111	0.0000	0.0204	0.0000
0.0000	0.0889	0.0000	0.0000	0.0000
0.0625	-	0.0000	0.0000	0.0000
0.0625	-	0.0192	0.0000	0.0600
0.0625	-	0.0000	0.0000	0.0000
-	-	0.0000	0.0204	0.0000
-	-	0.0769	-	0.0000
-	-	0.0192	-	-
-	-	0.0000	-	-
0.1250000000000000	0.1111111111111111	0.0576923076923077	0	0.1200000000000000

1	2
0.3333	0.0833
0.4667	0.0208
0.0000	0.1458
0.0222	0.0000
0.0222	0.1458
0.0222	0.0208
0.0222	0.0000
0.0667	0.0417
0.0444	0.0625
0.0000	0.0000
0.4222	0.0417
0.0000	0.0625
0.0222	0.0625
0.0000	0.2083
0.0000	0.0000
0.0222	0.0417
0.2000	0.0625
0.0222	0.0208
0.0222	0.0000
0.1333	0.0000
0.0000	0.0208
0.0000	0.0208
0.0444	0.0625
0.0222	0.0000
0.1111	0.0000
0.0222	0.0625
0.1333	0.0000
0.0444	0.3542
0.0444	0.0000
0.0000	0.0000
0.0222	0.3750
0.1556	0.0625
0.1778	0.0208
0.0222	0.0000
0.0222	0.0000
0.0444	0.1458
0.1778	0.1042
0.1556	0.0208
0.0222	0.0208
0.0000	0.0000
0.0222	0.0208
0.0667	0.0417
0.0000	0.1875
0.0000	0.2292
0.0222	0.2708
0.0000	-
0.0444	-
0.0222	-
-	-
-	-
-	-
-	-
0.2292	0.2222

1	4
0.3288	0.7292
0.3288	0.9792
0.3219	0.9792
0.3082	0.9792
0.3082	0.9792
0.3288	0.9792
0.3219	0.9792
0.3014	0.9375
0.3082	0.9792
0.2740	0.9792
0.3288	0.9375
0.3219	0.9792
0.3219	0.9792
0.3288	0.9792
0.3288	0.9792
0.3288	0.9792
0.3151	0.9583
0.3219	0.9583
0.3219	0.9792
0.3151	0.9375
0.2740	0.9792
0.3219	0.9792
0.3151	0.9792
0.3288	0.9792
0.3219	0.9792
0.3219	0.9792
0.3288	0.9792
0.3288	0.5625
0.3219	0.9792
0.3288	0.9792
0.3288	0.9792
0.3151	0.9167
0.3219	0.9792
0.3288	0.9792
0.3219	0.9792
0.3219	0.9792
0.3288	0.6667
0.3288	0.8125
0.3219	0.9792
0.3219	0.9167
0.3219	0.9792
0.3014	0.8958
0.3151	0.9792
0.2466	0.9792
0.3151	0.9792
0.3288	0.9792
0.3288	0.9792
0.3288	0.9792
-	1.0000
-	-
-	-
-	-
1.0000	1.0000

2	4
0.4752	0.2603
0.4356	0.3014
0.4752	0.2877
0.4554	0.3014
0.4752	0.3014
0.4653	0.3014
0.4455	0.3014
0.4752	0.3014
0.4752	0.3014
0.4653	0.3014
0.4653	0.2877
0.4752	0.3014
0.4752	0.3014
0.4752	0.3014
0.4653	0.3014
0.4752	0.3014
0.4554	0.3014
0.4653	0.3014
0.4653	0.3014
0.4653	0.3014
0.4158	0.3014
0.4653	0.2945
0.4752	0.3014
0.4356	0.3014
0.4653	0.3014
0.4752	0.3014
0.4752	0.3014
0.4752	0.1712
0.4653	0.3014
0.4257	0.3014
0.4752	0.3014
0.4752	0.3014
0.4356	0.3014
0.4653	0.3014
0.4653	0.3014
0.4752	0.3014
0.4752	0.2329
0.4653	0.2671
0.4653	0.3014
0.4752	0.3014
0.4455	0.3014
0.4653	0.2808
0.4752	0.3014
0.4752	0.3014
0.4752	0.3014
-	0.3082
-	0.3082
-	0.3082
-	0.3082
-	-
-	-
-	-
1.0000	1.0000

3	4
0.0204	0.0396
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0816	0.0000
0.0000	0.0000
0.2245	0.0198
0.0000	0.0000
0.0000	0.0000
0.0000	0.0198
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0204	0.0000
0.0000	0.0000
0.0000	0.0297
0.0000	0.0099
0.0000	0.0198
0.0000	0.0099
0.0000	0.0297
0.0000	0.0000
0.0000	0.0000
0.0204	0.0000
0.0000	0.0000
0.2653	0.0000
0.0000	0.0000
0.0204	0.0000
0.0000	0.0000
0.0000	0.0000
0.0204	0.0000
0.0408	0.0198
0.0000	0.0000
0.0000	0.0000
0.0000	0.0099
0.0000	0.0000
0.0000	0.0990
0.0204	0.0297
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.1429	0.0297
0.0000	0.0099
0.0000	0.0000
0.0000	0.0000
0.0000	0.0099
0.0000	0.0396
0.0000	0.0000
0.0000	0.0099
0.0000	-
0.0204	-
0.0000	-
0.0577	0.0000

1	4
0.0000	0.0204
0.0000	0.0000
0.0000	0.0408
0.0000	0.1020
0.0000	0.2245
0.0408	0.0000
0.0000	0.0612
0.0000	0.0000
0.0000	0.0204
0.0000	0.0000
0.0408	0.0816
0.0000	0.0000
0.0000	0.0408
0.0000	0.0000
0.0816	0.0000
0.0612	0.0000
0.0000	0.2041
0.0000	0.0204
0.0000	0.0204
0.0000	0.0408
0.0204	0.0000
0.0000	0.0000
0.0000	0.0204
0.0000	0.0612
0.0204	0.0000
0.0000	0.0204
0.0000	0.0408
0.0000	0.0000
0.0000	0.0000
0.0000	0.2857
0.0000	0.0000
0.0000	0.0408
0.0000	0.0408
0.0000	0.0408
0.0000	0.0000
0.0000	0.0000
0.0000	0.0204
0.0000	0.0000
0.0000	0.0000
0.0204	0.1020
0.0408	0.0408
0.0000	0.0204
0.0000	0.0000
0.0000	0.0204
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0	0.102040816326531

1	4
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0408	0.1020
0.0204	0.1837
0.0408	0.0000
0.0204	0.0816
0.0204	0.0000
0.0204	0.0000
0.0000	0.0000
0.0408	0.0000
0.0000	0.0000
0.0000	0.0204
0.0204	0.0000
0.1837	0.0000
0.0408	0.0000
0.0000	0.1429
0.0204	0.0000
0.0000	0.0000
0.0000	0.0408
0.0816	0.0000
0.0408	0.0000
0.0204	0.0000
0.0000	0.0000
0.0816	0.0000
0.0000	0.0000
0.0204	0.0204
0.0000	0.0000
0.0204	0.0000
0.0000	0.2653
0.0000	0.0000
0.0408	0.0204
0.0000	0.0204
0.0204	0.0000
0.0000	0.0000
0.0000	0.0000
0.0204	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.1020
0.1020	0.0000
0.0000	0.0000
0.0000	0.0000
0.0204	0.0000
0.0000	0.0000
0.0000	0.0000
0.0204	0.0000
0.0408	0.0000
0.0000	0.0000
-	-
-	-
-	-
0.0408	0.1020

2	3	4	5
0.0000	0.0000	0.0000	0.2941
0.0000	0.0000	-	0.0000
0.0000	0.0000	-	0.0000
0.0000	0.0385	-	0.0000
0.0213	0.0577	-	0.0000
0.0000	0.0192	-	0.0000
0.0000	0.0769	-	0.0000
0.0000	0.0000	-	0.0980
0.0000	0.0000	-	0.0000
0.0000	0.0000	-	0.0196
0.0000	0.0385	-	0.0000
0.0000	0.0000	-	0.0196
0.0000	0.0000	-	0.0196
0.0000	0.0000	-	0.0000
0.0000	0.0962	-	0.0000
0.0000	0.0000	-	0.0000
0.0426	0.0000	-	0.0000
0.0000	0.0962	-	0.0000
0.0000	0.1154	-	0.0000
0.0426	0.0000	-	0.0000
0.0000	0.0000	-	0.0000
0.0213	0.0192	-	0.0000
0.1064	0.0000	-	0.0196
0.0000	0.1154	-	0.0196
0.0000	0.0000	-	0.0000
0.0000	0.0000	-	0.0196
0.0000	0.0000	-	0.0196
0.0000	0.0000	-	0.0000
0.0000	0.0577	-	0.0000
0.0000	0.0385	-	0.0000
0.0000	0.0000	-	0.0000
0.0638	0.0000	-	0.0000
0.0000	0.0000	-	0.0000
0.0000	0.0000	-	0.0000
0.0000	0.0962	-	0.0196
0.0000	0.0385	-	0.0196
0.0000	0.0000	-	0.0392
0.0000	0.0385	-	0.0000
0.0000	0.0000	-	0.0392
0.0000	0.0000	-	0.0000
0.0000	0.0000	-	0.0000
0.0213	0.0000	-	0.0196
0.0000	0.0000	-	0.0000
0.0000	0.0000	-	0.0000
0.0000	0.0000	-	0.0392
0.0213	0.0385	-	0.0000
0.0426	0.0000	-	0.0392
-	0.0000	-	0.0392
-	0.0000	-	0.0000
-	0.0000	-	0.0000
-	0.2115	-	0.0000
-	0.1923	-	-
0.0212765957446809	0.0769230769230769	0	0.0196078431372549

2	3
0.0000	0.0000
0.0000	0.0000
0.0385	0.0000
0.0000	0.0000
0.0000	0.0851
0.0000	0.0000
0.0000	0.0426
0.0000	0.0000
0.0192	0.0000
0.1154	0.0000
0.0000	0.0638
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0213
0.0000	0.0000
0.0577	0.0000
0.0000	0.0213
0.0192	0.0851
0.0192	0.0000
0.0769	0.0000
0.0192	0.0000
0.1346	0.0000
0.0000	0.0638
0.0000	0.0000
0.0192	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0192	0.0000
0.0000	0.0000
0.0385	0.0000
0.0769	0.0000
0.0192	0.0000
0.0000	0.0426
0.0000	0.0000
0.0385	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0192	0.0000
0.0000	0.0000
0.0000	0.0213
0.0192	0.0000
0.0192	0.0000
0.0192	0.0000
-	0.0000
-	0.0000
-	0.0000
-	0.1702
-	0.2553
0.0426	0.0385

Eindhoven

1	2	3	4	5
0.0204	0.0000	0.0000	0.0000	0.0000
0.0612	0.0000	0.1731	0.0455	0.0000
0.0204	0.0196	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0196	0.0000	0.0000	0.0000
0.0204	0.0000	0.0769	0.0000	0.0200
0.0204	0.0000	0.0000	0.0227	0.0000
0.0408	0.0000	0.0000	0.0455	0.0000
0.2857	0.0000	0.0385	0.0000	0.0000
0.0204	0.0000	0.0000	0.0455	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0408	0.0000	0.1154	0.0000	0.0000
0.0408	0.0392	0.0000	0.0000	0.0000
0.0204	0.0392	0.0385	0.0000	0.0200
0.0204	0.0000	0.0577	0.0000	0.0000
0.0204	0.0000	0.0000	0.0227	0.0000
0.0408	0.0000	0.0000	0.0455	0.0200
0.0408	0.0000	0.0000	0.0000	0.0000
0.0204	0.0000	0.0000	0.0000	0.0200
0.0000	0.0000	0.0192	0.0000	0.0000
0.0000	0.0392	0.0000	0.0227	0.0200
0.0000	0.0000	0.0000	0.1136	0.0200
0.0204	0.0000	0.0000	0.0000	0.0000
0.0408	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0192	0.0000	0.0000
0.0000	0.0000	0.0962	0.0227	0.0200
0.0408	0.0000	0.1346	0.1136	0.0000
0.1020	0.0392	0.1538	0.0000	0.0200
0.0612	0.0000	0.0385	0.0000	0.1200
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0612	0.0000	0.0000	0.0000	0.0000
0.0000	0.0392	0.0000	0.0000	0.0000
0.1224	0.0000	0.0000	0.0000	0.0000
0.4490	0.0000	0.0000	0.0000	0.0000
0.0000	0.1569	0.0000	0.0000	0.0000
0.0000	0.0000	0.0769	0.0000	0.0200
0.0000	0.0392	0.0000	0.0000	0.0000
0.0612	0.0000	0.0000	0.0000	0.0000
0.0408	0.0000	0.0000	0.0000	0.0000
0.0612	0.0196	0.0000	0.0000	0.0000
0.0000	0.0196	0.0000	0.1364	0.0000
0.0204	0.0000	0.1346	0.0000	0.0600
0.0816	0.0000	0.0000	0.0000	0.0000
0.0204	0.0000	0.0000	-	0.0000
0.0000	0.0000	0.0192	-	0.0000
0.0612	0.0000	0.0192	-	0.0000
0.2041	0.0980	0.0000	-	0.0000
0.1429	0.0392	0.0000	-	0.0000
-	0.0196	0.0577	-	0.0000
-	0.1961	0.0769	-	-
-	-	0.1538	-	-
0.122448979591837	0.0392156862745098	0.115384615384615	0.06818181818182	0.0200000000000000

1	2
0.0980	0.0408
0.0196	0.0408
0.0000	0.0000
0.0000	0.0204
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0816
0.4706	0.0000
0.0196	0.0000
0.0392	0.1633
0.0000	0.0612
0.0000	0.0204
0.0000	0.0000
0.0000	0.0612
0.0000	0.0000
0.0000	0.0204
0.0784	0.0408
0.0392	0.0204
0.0196	0.0000
0.0196	0.0000
0.0000	0.0000
0.0000	0.0612
0.0000	0.1224
0.0196	0.0408
0.0000	0.0408
0.0000	0.0612
0.0196	0.0000
0.0196	0.0816
0.0000	0.0000
0.0196	0.0612
0.0196	0.0000
0.0196	0.0000
0.0196	0.0000
0.1765	0.0408
0.4706	0.0408
0.0196	0.2449
0.0000	0.0408
0.0196	0.0204
0.0784	0.0000
0.0000	0.0000
0.0196	0.0612
0.0000	0.1020
0.0196	0.0816
0.3137	0.0000
0.0000	0.0000
0.0000	0.0204
0.1176	0.0000
0.0588	0.1429
0.0196	0.0204
-	0.1429
-	0.3265
-	-
0.1020	0.1373

1	3
0.0971	0.0204
0.0000	0.3469
0.0000	0.0408
0.0000	0.0816
0.0000	0.0204
0.0000	0.2653
0.0000	0.0000
0.0000	0.0204
0.2330	0.0000
0.0000	0.0204
0.0583	0.0816
0.0000	0.0204
0.0000	0.0612
0.0000	0.0000
0.0000	0.2245
0.0000	0.0612
0.0000	0.0816
0.0680	0.0204
0.0485	0.0612
0.0194	0.0000
0.0291	0.0612
0.0000	0.1020
0.0000	0.0000
0.0000	0.0408
0.0097	0.0000
0.0291	0.2245
0.0000	0.0612
0.0194	0.0816
0.0194	0.1429
0.0000	0.0000
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Tilburg

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0.3288	0.7143
0.3288	0.7143
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0.0417	0.1569	0.0000	0.0233	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
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0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0465	0.0400
0.0417	0.0000	0.0000	0.0000	0.0000
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0.3125	0.0000	0.0000	0.0000	0.0000
0.0208	0.0588	0.0000	0.0233	0.0000
0.0417	0.0784	0.0000	0.2791	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.1176	0.0000	0.0000	0.0000
0.0417	0.0000	0.0000	0.0000	0.0000
0.0625	0.0588	0.0000	0.0233	0.0000
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0.1042	0.0000	0.0000	0.0000	0.0000
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0.0625	0.0000	0.0784	0.0000	0.0000
0.0208	0.1176	0.0000	0.0233	0.0200
0.0000	0.0196	0.0000	0.0000	0.0000
0.0000	0.0392	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0588	0.0000	0.0465	0.0000
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0.0000	0.0000	0.0000	-	0.0000
0.0000	0.0000	0.0000	-	0.0000
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0.2500	0.0588	0.0000	-	0.0000
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0.0000	0.0417
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0.0000	0.0000
0.0392	0.1042
0.0000	0.0000
0.0000	0.1458
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0.2941	0.0417
0.0196	0.0625
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0.1373	0.1250
0.0196	0.0417
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0.0000	0.0000
0.0392	0.0000
0.0392	0.0625
0.0000	0.0417
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0.0000	0.0000
0.0000	0.0000
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0.0392	0.0625
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0.0000	0.0208
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0.0000	0.0208
0.0098	0.0000
0.0588	0.0417
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0.0207	0.0208
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0.0000	0.0098
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0.0000	0.0490
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0.0000	0.0000
0.0000	0.0392
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0.0196	0.0196
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-	-
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Maastricht

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0.4510	0.4286
0.0392	0.3810
0.9804	0.8810
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0.4706	0.4524
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0.8039	0.5476
0.5686	0.3810
0.2941	0.5238
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0.1176	0.4524
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0.2353	0.2619
0.6667	0.6429
0.0392	0.3810
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-	-
0.7381	0.9804

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0.2000	0.4524
0.2400	0.9048
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0.4700	0.5238
0.1100	0.6190
0.4800	0.7381
0.4800	0.5952
0.1000	0.5476
0.4800	0.7857
0.4800	0.6429
0.4700	0.5714
0.4100	0.9524
0.4000	0.7381
0.2200	0.6190
0.0800	0.6429
0.0200	0.6429
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0.4800	0.6190
0.4000	0.6190
0.1500	0.4524
0.4700	0.6429
0.4700	0.7381
0.4800	0.5238
0.3400	0.5952
0.0300	0.4524
0.2700	0.4524
0.4500	0.6190
0.4700	0.5476
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0.1700	0.6667
0.3100	0.6190
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0.3267	0.8571
0.3267	0.9524
0.3267	0.9524
0.3267	0.9286
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0.3200	0.9524
0.3267	0.9524
0.3200	0.9524
0.3267	0.9762
0.3267	0.9048
0.3267	0.9524
0.3267	0.9524
0.3267	0.9524
0.3267	0.9524
0.3267	0.9048
0.3267	0.9524
0.2933	0.9524
0.3267	0.8095
0.3267	0.9524
0.3267	0.9524
0.3267	0.9524
0.0067	0.8810
0.3267	0.9048
0.3267	0.9524
0.3267	0.9048
0.3267	0.9524
0.3267	0.9524
0.3267	0.9524
0.3267	0.9048
0.3267	0.9524
0.3267	0.9048
0.3267	0.8571
0.3267	0.9286
0.3267	0.9524
0.3267	0.8571
0.3267	0.9524
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-	-
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0.9592	0.5000
0.8776	0.5000
0.9592	0.5000
0.9388	0.5000
0.9592	0.0300
0.9388	0.4900
0.9796	0.5000
0.9592	0.4400
0.9592	0.5000
0.9388	0.5000
0.9592	0.5000
0.8571	0.5000
0.9388	0.5000
0.9592	0.5000
0.9592	0.4700
0.9592	0.5000
0.9388	0.3900
0.9592	0.5000
0.9388	0.5000
0.7959	0.4500
0.8776	0.5000
0.8980	0.5000
0.8776	0.5000
0.9796	0.5000
0.8980	0.5000
0.9184	0.5000
0.8571	0.5000
0.9388	0.4700
0.9388	0.5000
0.9592	0.5000
0.8776	0.5000
0.9592	0.5000
0.8980	0.5000
0.9592	0.5000
0.9388	0.5000
0.9592	0.5000
0.9592	0.2300
0.9592	0.5000
0.9592	0.5000
0.7959	0.5000
0.9388	0.3600
0.9184	0.5000
0.9388	0.5000
0.9184	0.5000
0.9592	0.5000
0.9592	0.5000
0.9388	0.4200
0.9796	-
0.9796	-
-	-
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0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0200	0.0385	0.0000
0.0000	0.3077	0.0000
0.1200	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0192	0.0000
0.0000	0.0192	0.0000
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0.0400	0.0192	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0385	0.0196
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0196
0.0200	0.0192	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0192	0.0000
0.0000	0.0000	0.0196
0.0000	0.0385	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.1373
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0192	0.0196
0.0000	0.0192	0.0000
0.0200	0.0192	0.0000
0.0000	0.0192	0.0000
0.0200	0.0385	0.0000
0.0200	0.0000	0.0000
0.0000	0.0385	0.0196
0.0400	0.0577	0.0196
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0600	0.0192	0.0000
0.0000	0.0000	0.0000
0.1400	0.0192	0.0000
0.0000	0.0192	0.0000
-	0.0192	0.0000
-	0.0962	-
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0.2308	0.4600
0.9808	0.7000
0.2115	0.7000
0.9038	0.6800
0.9038	0.5000
0.9808	0.5400
0.8077	0.9000
0.2308	0.5800
0.3077	0.4400
0.3846	0.6000
0.2500	0.7000
0.9615	0.6600
0.6538	0.5400
0.9808	0.9000
0.3269	0.7000
0.8462	0.9000
0.9038	0.4400
0.1923	0.7000
0.9615	0.6200
0.0385	0.7200
0.1538	0.3800
0.0385	0.5800
0.6731	0.5800
0.2692	0.1600
0.9615	0.7400
0.4038	0.6200
0.5385	0.4400
0.9038	0.4600
0.1346	0.5000
0.6154	0.5400
0.6538	0.5600
0.9615	0.4600
0.9808	0.2600
0.3462	0.4600
0.0577	0.9200
0.6154	0.6800
0.8846	0.7200
0.0192	0.6000
0.9808	0.4400
0.2308	0.6400
0.8462	0.6800
0.6923	0.5600
0.9038	0.6600
0.9615	0.6600
0.9808	0.5400
0.4038	0.6200
0.9808	0.6800
0.9808	0.5800
-	0.9600
-	1.0000
0.9200	1.0000

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0.4757	0.6800
0.4369	0.1400
0.4369	0.9200
0.3495	0.8000
0.4563	0.9400
0.4272	0.9600
0.4272	0.9600
0.3204	0.4400
0.4854	0.9400
0.4660	0.8800
0.4660	0.9600
0.4272	0.8000
0.4757	0.7800
0.3204	0.9800
0.4272	0.9600
0.2621	0.9800
0.4660	0.9600
0.4175	0.9600
0.4078	0.9200
0.4660	0.9400
0.3786	0.9400
0.4272	0.7800
0.4563	0.9600
0.4175	0.9600
0.4272	0.7800
0.4466	0.9600
0.4369	0.9400
0.4272	0.9600
0.4175	0.9400
0.4272	0.9600
0.4369	0.9600
0.4369	0.8600
0.4563	0.0200
0.4369	0.9600
0.3204	0.1800
0.4466	0.8200
0.4175	0.8000
0.4466	0.2600
0.4369	0.2400
0.4369	0.9600
0.1845	0.9400
0.4757	0.9600
0.4272	0.9800
0.4757	0.9600
0.4175	0.9600
0.4369	0.9800
0.0583	0.9000
0.4466	0.8800
0.3301	0.8800
0.3398	0.9400
-	0.8000
-	-
0.9800	0.9804

Heerlen

1	2	3	4	5
0.0000	0.0000	0.0000	0.0000	0.0392
0.0625	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0625	0.0000	0.0000	0.0698	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0625	0.0000	0.0000	0.0465	0.0000
0.0000	0.0196	0.0000	0.0698	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0385	0.0000	0.0000
0.0208	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
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0.0000	0.0000	0.0000	0.0000	0.0000
0.0208	0.0000	0.0192	0.0233	0.0000
0.0208	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0192	0.0000	0.0000
0.0000	0.0784	0.0000	0.2558	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0465	0.0196
0.0000	0.0000	0.0385	0.0000	0.0000
0.0000	0.0000	0.1923	0.0233	0.0000
0.2500	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
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0.0208	0.0000	0.0000	0.0930	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0196	0.0192	0.0233	0.0000
0.0208	0.0000	0.0000	0.0233	0.0000
0.0000	0.0000	0.0192	0.0233	0.0000
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0.0000	0.0000	0.0192	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0784
0.0000	0.0000	0.0192	0.0000	0.0196
0.0000	0.0000	0.0192	0.0000	0.0000
0.0208	0.0000	0.0192	0.0465	0.0000
0.0000	0.0000	0.0000	0.0233	0.0000
0.0208	0.0000	0.0000	0.0000	0.0196
0.0417	0.0000	0.0000	0.0000	0.0000
0.0417	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0208	0.0000	0.0962	0.0233	0.0000
0.0000	0.0000	0.0000	-	0.0000
0.0208	0.0000	0.0000	-	0.0000
0.0833	0.0000	0.0000	-	0.0000
0.0000	0.0196	0.0000	-	0.0000
0.0208	0.0196	0.0000	-	0.0000
-	0.0000	0.0000	-	0.0000
-	0.0000	0.0000	-	0.0000
-	0.0000	0.0000	-	0.0196
-	-	0.0000	-	-
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0.9804	0.9375
0.9804	0.6042
0.9608	0.8958
0.9608	0.9167
0.9804	0.9375
0.8431	0.2292
0.9216	0.4792
0.9020	0.8333
0.9608	0.9792
0.9804	0.9583
0.9608	0.9792
0.9020	0.9792
0.9020	0.9792
0.9804	0.9792
0.9412	0.9375
0.9608	0.9792
0.9608	0.9792
0.9412	0.9792
0.5490	0.9792
0.9412	0.9792
0.9804	0.9792
0.6863	0.8750
0.9020	0.9792
0.9804	0.9167
0.9412	0.8750
0.9804	0.9792
0.8824	0.9792
0.9608	0.9792
0.9804	0.9792
0.9412	0.9792
0.7843	0.9375
0.9412	0.9792
0.9608	0.8333
0.8235	0.9792
0.9412	0.9375
0.9020	0.6250
0.7647	0.9583
0.9608	0.7708
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0.5294	0.9792
0.9804	0.9792
0.9608	0.9375
0.7451	0.9583
0.9020	0.9792
0.8627	0.8750
0.9804	0.9583
0.9608	0.7708
-	1.0000
-	0.9792
-	1.0000
-	-
1.0000	1.0000

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0.2877	0.9792
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0.2877	0.9792
0.2877	0.9792
0.2808	0.9792
0.2877	0.9792
0.2877	0.9792
0.2877	0.9792
0.2877	0.9792
0.2877	0.9583
0.2877	0.9792
0.2808	0.9792
0.2877	0.9792
0.2877	0.9792
0.2877	0.9792
0.2877	0.9792
0.2603	0.9792
0.2877	0.9792
0.2877	0.9792
0.2740	0.9583
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0.2877	0.9792
0.2877	0.9792
0.2877	0.9792
0.2877	0.8958
0.2740	0.9792
0.2877	0.9375
0.2877	0.9375
0.2808	0.9792
0.2877	0.9792
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0.2808	0.9792
0.2877	0.9792
0.2877	0.9792
0.2534	0.9792
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0.2945	-
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-	-
-	-
-	-
-	-
1.0000	1.0000

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0.0105	0.0342
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0.0000	0.0000
0.0000	0.0068
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0.0000	0.0068
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0.0000	0.0000
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0.0000	0.0000
0.0000	0.0068
0.0105	0.0000
0.0211	0.0000
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0.0000	0.0137
0.0211	0.0000
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0.0000	0.0000
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0.0211	-
0.0000	-
0.0105	-
0.0211	-
0.0105	-
0.0105	-
0.0000	-
-	-
0.0000	0.0000

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0.0000	0.0068
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0.0106	0.0000
0.0106	0.0068
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0.0000	0.0068
0.0000	0.0000
0.0000	0.0342
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0.0000	0.0068
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0.0106	0.0000
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0.0000	0.0137
0.0000	0.0000
0.0426	0.0068
0.0319	0.0000
0.0000	0.0753
0.0213	0.0068
0.0106	0.0000
0.0000	0.0205
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0.0000	0.0000
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0.0000	0.0068
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0.0192	0.0000

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0.0408	0.0000	0.0196	0.0000
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0.0612	-	0.0000	0.0000
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0.9388	-	0.0000	0.0208
0.0204	-	0.0000	0.0000
0.0204	-	0.1176	0.0000
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0.0204	-	0.0588	0.0000
0.0204	-	0.0000	0.0000
0.0204	-	0.0000	0.0000
0.0204	-	0.0588	0.0000
0.0204	-	0.0000	0.0000
0.0816	-	0.0196	0.0000
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0.0408	-	0.0000	0.0000
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0.0000	-	0.0000	0.0000
0.0408	-	0.0196	0.0000
0.0204	-	0.0000	0.0000
0.0204	-	0.0000	0.0000
0.0204	-	0.0784	0.0000
0.0204	-	0.0000	0.0000
0.0204	-	0.0000	0.0000
0.0204	-	0.0000	0.0000
0.0204	-	0.1176	0.0000
0.0408	-	0.0000	0.0000
0.0204	-	0.0000	0.0000
0.0204	-	0.0000	0.0000
0.0204	-	0.0000	0.0000
0.0204	-	0.0000	0.0000
0.0204	-	0.0784	0.0417
0.0204	-	0.0000	0.0000
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0.0204	-	0.0392	0.0000
0.0204	-	0.0000	0.0000
0.0204	-	0.0000	0.0000
0.0204	-	0.0000	-
-	-	0.0392	-
-	-	0.0980	-
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0.0000	0.0408
0.0000	0.0408
0.0769	0.1020
0.0000	0.0204
0.0000	0.0816
0.6154	0.0000
0.1154	0.0204
0.1731	0.0204
0.0192	0.0204
0.0769	0.0000
0.0000	0.0204
0.0192	0.0204
0.0000	0.0816
0.0385	0.2449
0.0000	0.0612
0.5192	0.0816
0.0000	0.0204
0.0385	0.0204
0.0192	0.0204
0.0192	0.0612
0.3077	0.1224
0.0000	0.0204
0.0000	0.0204
0.2500	0.0612
0.0577	0.0816
0.0385	0.0204
0.0000	0.0204
0.0000	0.0816
0.0962	0.0204
0.0577	0.0612
0.0000	0.2857
0.0000	0.0408
0.0000	0.0204
0.0000	0.0204
0.0000	0.0204
0.0000	0.0204
0.0000	0.0612
0.0000	0.0816
0.0000	0.0204
0.0385	0.3061
0.0962	0.0408
0.0769	0.0408
0.0000	0.0816
0.0000	0.0204
0.0000	0.0204
0.0000	0.0612
0.0577	0.0612
0.0000	0.0408
-	0.2245
-	0.4082
-	-
0.1429	0.1373

1	4
0.0000	0.2245
0.2900	0.5102
0.2600	0.6531
0.0300	0.5306
0.4500	0.2245
0.3400	0.3469
0.4700	0.1429
0.0000	0.3061
0.0000	0.5714
0.0700	0.2653
0.0000	0.0204
0.4500	0.1429
0.1100	0.5714
0.0100	0.3265
0.3400	0.3265
0.4400	0.4286
0.0000	0.5918
0.0400	0.6939
0.0300	0.4286
0.0000	0.6327
0.1800	0.1633
0.0000	0.1837
0.2900	0.2449
0.1700	0.0204
0.0500	0.6327
0.2200	0.4082
0.2000	0.5918
0.3700	0.3265
0.4500	0.1633
0.0400	0.5510
0.0100	0.2041
0.2100	0.4490
0.2600	0.4286
0.3600	0.5918
0.2600	0.5714
0.1300	0.7143
0.4400	0.6327
0.2600	0.5918
0.0600	0.4898
0.3800	0.2653
0.0000	0.5102
0.0000	0.6122
0.1100	0.5510
0.4500	0.1224
0.4500	0.2449
0.3000	0.7143
0.3600	0.5102
0.2200	0.5306
0.2200	-
-	-
-	-
-	-
0.6327	0.9583

3	4
0.9375	0.3939
0.9375	0.4343
0.9375	0.4848
0.8542	0.4444
0.9375	0.3838
0.9375	0.4040
0.7083	0.3535
0.9167	0.4343
0.0833	0.4747
0.6250	0.4141
0.9583	0.0909
0.1250	0.3535
0.9375	0.4646
0.9375	0.4141
0.9583	0.4545
0.9375	0.4646
0.8333	0.4747
0.8958	0.4848
0.0417	0.4444
0.7500	0.4747
0.9375	0.3535
0.9583	0.3535
0.8958	0.3939
0.6667	0.0303
0.9583	0.4747
0.9792	0.4545
0.9375	0.4747
0.9375	0.4242
0.9375	0.3737
0.2917	0.4545
0.9583	0.3737
0.9375	0.4444
0.9375	0.4444
0.7917	0.4747
0.9375	0.4747
0.3958	0.5051
0.5625	0.4848
0.9375	0.4747
0.9375	0.4646
0.8125	0.3939
0.9792	0.4646
0.9375	0.4848
0.9375	0.4646
0.9375	0.3737
0.8333	0.4040
0.3542	0.4949
0.9583	0.4444
0.9583	0.4545
0.9583	-
0.9583	-
1.0000	-
-	-
0.9608	0.9583

Roermond

2	3	4
0.0000	0.0000	0.0000
0.0000	0.0962	0.0204
0.0000	0.0385	0.0816
0.0392	0.0000	0.1020
0.0000	0.0000	0.1224
0.0000	0.0192	0.0408
0.0000	0.0000	0.0000
0.0000	0.0000	0.0204
0.0000	0.0385	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0192	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0196	0.0000	0.0000
0.0000	0.0192	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0588	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.1154	0.0408
0.0000	0.0000	0.0000
0.0392	0.0000	0.0000
0.0000	0.0000	0.0408
0.0000	0.0192	0.0816
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0196	0.0000	0.0000
0.0000	0.0000	0.1633
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0000
0.0000	0.0000	0.0408
0.0000	0.0000	0.0000
0.0000	0.0000	0.0816
0.0000	0.0000	0.1020
0.0000	0.0577	0.0408
0.0000	0.0000	0.0000
0.0588	0.0192	0.0000
0.0196	0.0000	0.0816
0.0196	0.0577	0.1633
0.0000	0.0000	0.1224
0.0000	0.0000	-
0.1176	0.0000	-
-	0.0000	-
0.0196078431372549	0.0192307692307692	0.122448979591837

2	3
0.8462	0.4706
0.5769	0.8431
0.5577	0.5882
0.8077	0.3922
0.2885	0.1961
0.4038	0.8627
0.7885	0.4314
0.3846	0.3137
0.3654	0.9020
0.0000	0.8039
0.6923	0.6863
0.6346	0.3529
0.9038	0.9020
0.8269	0.8039
0.9808	0.0980
0.6731	0.6275
0.5962	0.5490
0.1538	0.8431
0.5000	0.7059
0.0769	0.2941
0.9231	0.3922
0.7308	0.6275
0.8654	0.8235
0.2500	0.1373
0.9038	0.6667
0.8269	0.2157
0.2885	0.2549
0.5769	0.2745
0.9808	0.9216
0.3269	0.2353
0.7692	0.3922
0.8269	0.7647
0.8462	0.8039
0.5000	0.5294
0.1731	0.6863
0.5769	0.6078
0.6538	0.9412
0.4038	0.6275
0.3654	0.3137
0.7308	0.4510
0.7885	0.7255
0.9615	0.7255
0.9615	0.6471
0.9808	0.9020
0.8846	0.7843
0.0000	0.6078
0.1923	0.4510
0.1731	0.9216
0.1731	0.9412
0.9615	0.8235
0.9808	0.7451
-	0.6275
0.9412	0.9808

2	4
0.0000	0.0000
0.0000	0.0000
0.0000	0.0196
0.0198	0.0000
0.0000	0.0392
0.0000	0.0196
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0099	0.0000
0.0396	0.0000
0.0297	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0297	0.0000
0.0000	0.0000
0.0000	0.0000
0.0099	0.0000
0.0198	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0594	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0198	0.0000
0.0000	0.0392
0.0000	0.0000
0.0000	0.1373
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0588
0.0297	0.0392
0.0099	0.0980
0.0000	0.0000
0.0396	0.0000
0.0000	0.0196
0.0000	0.2157
0.0000	0.0784
0.0000	-
0.0693	-
-	-
0.0000	0.0408

3	4
0.3673	0.4950
0.8776	0.4752
0.4898	0.5050
0.2857	0.4950
0.2041	0.5050
0.8367	0.5050
0.3673	0.3960
0.2449	0.4950
0.8367	0.2970
0.7959	0.2079
0.6939	0.1089
0.2449	0.2772
0.8367	0.1188
0.7959	0.3267
0.1224	0.2772
0.5714	0.2277
0.4898	0.0297
0.7755	0.2871
0.6939	0.3168
0.2653	0.3168
0.3061	0.3465
0.6735	0.2277
0.7959	0.0693
0.2041	0.3564
0.6327	0.4059
0.2449	0.1881
0.2857	0.5050
0.2653	0.2871
0.8163	0.2970
0.2245	0.4950
0.3265	0.5050
0.7143	0.1782
0.7755	0.3564
0.3878	0.0099
0.6531	0.0990
0.5918	0.0396
0.8776	0.2178
0.4898	0.2673
0.2653	0.2970
0.2653	0.4950
0.7551	0.3069
0.7347	0.0297
0.6122	0.2178
0.8367	0.0891
0.7959	0.3168
0.4898	0.2475
0.2449	0.4851
0.8776	0.0000
0.8980	0.0000
0.7551	-
0.7143	-
0.5510	-
1.0000	0.8163

1	2	4	5
0.0000	0.0392	0.0000	0.0000
0.0000	0.0392	0.1020	0.0000
0.0204	0.0392	0.0000	0.0000
0.0204	0.0000	0.0000	0.0000
0.0408	0.3333	0.0000	0.0000
0.0204	0.0196	0.0204	0.0000
0.0204	0.0392	0.0204	0.0000
0.0204	0.0196	0.0204	0.0000
0.0204	0.4902	0.0204	0.0000
0.0000	0.0392	0.0000	0.0000
0.0204	0.0392	0.0000	0.0000
0.0000	0.0784	0.0000	0.0000
0.0000	0.0392	0.0408	0.0196
0.0000	0.0784	0.0408	0.0000
0.0816	0.0000	0.3673	0.0392
0.0612	0.0392	0.0000	0.0000
0.0000	0.0196	0.0000	0.0000
0.0204	0.1176	0.0204	0.0392
0.0204	0.0196	0.0000	0.0000
0.0204	0.0196	0.0204	0.0000
0.0204	0.0000	0.0204	0.0000
0.0612	0.0000	0.0000	0.0000
0.0000	0.0980	0.0000	0.0000
0.0000	0.0784	0.0000	0.0000
0.0204	0.0588	0.0000	0.0000
0.0000	0.0392	0.0000	0.0000
0.0408	0.0000	0.0612	0.0000
0.0408	0.0392	0.0204	0.0196
0.0000	0.0196	0.1020	0.0000
0.0204	0.0196	0.0204	0.0000
0.0408	0.0000	0.0204	0.0000
0.0204	0.0392	0.0000	0.0000
0.0204	0.0392	0.0000	0.0000
0.2857	0.0392	0.0408	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0204	0.0000
0.0000	0.0000	0.0204	0.0588
0.0000	0.0196	0.0000	0.0000
0.0204	0.0196	0.0204	0.0000
0.0612	0.2549	0.0000	0.0196
0.0204	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.3265	0.0392	0.0000	0.0000
0.0204	0.0000	0.0408	0.0000
0.0204	0.0588	0.0000	0.0000
0.0000	0.0392	0.0612	0.0000
0.0000	0.0000	0.0204	0.0784
0.0204	0.0196	0.0408	0.0000
0.0204	0.0000	0.0000	0.0000
-	0.0392	-	0.0000
-	0.1569	-	0.0000
0.0408163265306122	0.0980392156862745	0.0612244897959184	0

1	2
0.0392	0.0000
0.0000	0.0000
0.0588	0.0000
0.0196	0.0204
0.0784	0.3469
0.0000	0.0204
0.0000	0.0000
0.0588	0.0204
0.0196	0.4694
0.0000	0.0000
0.0000	0.0000
0.0588	0.0000
0.0000	0.0204
0.0000	0.1224
0.0588	0.0000
0.0784	0.0204
0.0392	0.0204
0.0196	0.1224
0.0392	0.0204
0.0392	0.0204
0.0196	0.0000
0.0196	0.0000
0.0392	0.1837
0.0392	0.1429
0.0196	0.0408
0.0000	0.0000
0.0980	0.0000
0.0392	0.0204
0.0392	0.0204
0.0000	0.0000
0.0196	0.0204
0.0392	0.0204
0.0196	0.0000
0.2941	0.0000
0.0000	0.0000
0.0392	0.0204
0.0196	0.0000
0.0196	0.0204
0.0392	0.0000
0.1176	0.1633
0.0196	0.0000
0.0000	0.0204
0.2353	0.0000
0.0000	0.0000
0.0000	0.0204
0.0000	0.0000
0.0392	0.0000
0.0588	0.0204
0.0980	0.0000
-	0.0204
-	0.1020
-	-
0.0612	0.1569

1	4
0.0000	0.0204
0.0000	0.0612
0.0000	0.0000
0.0000	0.0000
0.0200	0.0204
0.0000	0.0408
0.0000	0.0204
0.0100	0.0408
0.0000	0.0204
0.0000	0.0000
0.0000	0.0000
0.0100	0.0204
0.0000	0.0000
0.0000	0.0000
0.0100	0.3469
0.0300	0.0000
0.0100	0.0000
0.0000	0.0000
0.0100	0.0204
0.0100	0.0204
0.0100	0.0000
0.0400	0.0000
0.0100	0.0000
0.0100	0.0000
0.0100	0.0000
0.0000	0.0204
0.0300	0.0408
0.0100	0.0204
0.0100	0.1429
0.0000	0.0204
0.0100	0.0204
0.0100	0.0000
0.0000	0.0204
0.1400	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0408
0.0000	0.0000
0.0100	0.0204
0.0100	0.0000
0.0100	0.0000
0.0000	0.0204
0.1100	0.0000
0.0000	0.0612
0.0000	0.0000
0.0000	0.0612
0.0100	0.0204
0.0100	0.0204
0.0200	0.0204
-	-
-	-
-	-
0.0408	0.0408

2	4
0.0204	0.0200
0.0000	0.0500
0.0000	0.0100
0.0000	0.0100
0.3673	0.0100
0.0204	0.0300
0.0204	0.0300
0.0204	0.0300
0.4898	0.0100
0.0000	0.0000
0.0000	0.0100
0.0204	0.0000
0.0204	0.0500
0.1020	0.0300
0.0000	0.1400
0.0204	0.0000
0.0204	0.0000
0.0612	0.0100
0.0000	0.0000
0.0204	0.0200
0.0000	0.0300
0.0000	0.0000
0.1224	0.0000
0.1020	0.0000
0.0204	0.0100
0.0000	0.0000
0.0000	0.0300
0.0204	0.0500
0.0000	0.0800
0.0000	0.0300
0.0000	0.0300
0.0204	0.0000
0.0000	0.0000
0.0000	0.0400
0.0000	0.0000
0.0000	0.0100
0.0000	0.0100
0.0204	0.0000
0.0000	0.0200
0.2041	0.0000
0.0000	0.0100
0.0000	0.0100
0.0204	0.0000
0.0000	0.0400
0.0204	0.0000
0.0000	0.0200
0.0000	0.0200
0.0000	0.0200
0.0000	0.0000
0.0204	-
0.1020	-
-	-
0.1373	0.0204

Rotterdam Zuid

1	2	3	4	5
0.0286	0.0000	0.0000	0.0000	0.0000
0.0571	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0286	0.0000	0.0000	0.0000	0.0000
0.0286	0.0000	0.0000	0.0000	0.0000
0.0571	0.0000	0.0000	0.0000	0.0000
0.0286	0.0000	0.0652	0.0000	0.0000
0.0286	0.0000	0.0000	0.0000	0.0000
0.0286	0.0000	0.0000	0.0303	0.0000
0.0286	0.0000	0.0000	0.0909	0.0000
0.0286	0.0000	0.0000	0.0000	0.0435
0.0286	0.0000	0.0000	0.0000	0.0870
0.0571	0.0000	0.0000	0.0303	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0286	0.0000	0.0000	0.0303	0.0000
0.0000	0.0000	0.0000	0.0303	0.0217
0.0286	0.0000	0.0217	0.0000	0.0000
0.0286	0.0000	0.0000	0.1515	0.0435
0.0000	0.0000	0.0000	0.0303	0.0000
0.0000	0.0000	0.0217	0.0000	0.0000
0.0286	0.0000	0.0000	0.0000	0.0000
0.7143	0.0000	0.0000	0.0000	0.0435
0.0286	0.0000	0.0000	0.0606	0.0000
0.0571	0.0000	0.0000	0.0000	0.0000
0.0571	0.0000	0.0000	0.0000	0.0000
0.0286	0.0000	0.0000	0.0000	0.0000
0.0571	0.0000	0.0000	0.0000	0.0000
0.0286	0.0000	0.0217	0.0000	0.0000
0.0571	0.0000	0.0217	0.0000	0.0217
0.0286	-	0.0000	0.0000	0.0000
0.0286	-	0.0000	0.0909	0.0000
0.0286	-	0.0000	0.0000	0.0000
0.3429	-	0.0000	0.0000	0.0000
0.0286	-	0.0000	-	0.0000
0.0286	-	0.0000	-	0.0000
-	-	0.0000	-	0.0000
-	-	0.0000	-	0.0000
-	-	0.0000	-	0.0000
-	-	0.0000	-	0.0000
-	-	0.0000	-	0.0217
-	-	0.0217	-	0.0000
-	-	0.0000	-	0.0217
-	-	0.0000	-	0.0000
-	-	0.0000	-	0.0000
-	-	0.0000	-	0.0000
-	-	0.0000	-	0.0000
0.0571428571428571	0	0	0.0303030303030303	0

[illegible]

1	3
0.2133	0.9714
0.3200	0.2857
0.1867	0.0000
0.2667	0.0571
0.2667	0.3714
0.3733	0.0857
0.1867	0.9714
0.3200	0.1429
0.2133	0.9143
0.2267	0.9143
0.3467	0.0286
0.2800	0.0286
0.3333	0.1143
0.2000	0.2857
0.2400	0.7143
0.2533	0.0286
0.0667	0.0286
0.2133	0.0286
0.2533	0.0571
0.3067	0.0286
0.3600	0.1429
0.5733	0.6857
0.2400	0.9714
0.3200	0.9429
0.2267	0.3143
0.2000	0.0286
0.3333	0.6857
0.2533	0.0286
0.3067	0.8857
0.1733	0.0286
0.0800	0.9429
0.2267	0.9143
0.1467	0.9143
0.2800	0.0571
0.2533	0.5429
-	1.0000
-	0.0286
-	0.0571
-	0.8571
-	0.0286
-	0.0286
-	1.0000
-	0.7714
-	0.9429
-	0.5143
-	0.0000
-	-
-	-
-	-
-	-
-	-
-	-
0.9429	0.5870

[illegible]

2	3
0.5217	0.3600
0.3478	0.0400
0.3261	0.0000
0.3478	0.0133
0.3478	0.0533
0.4130	0.0000
0.3043	0.3733
0.3696	0.0267
0.3261	0.3200
0.3913	0.3333
0.3913	0.0133
0.4130	0.0000
0.3696	0.0133
0.3913	0.0533
0.5435	0.1333
0.1087	0.0133
0.3043	0.0000
0.2826	0.0000
0.3043	0.0000
0.2826	0.0000
0.3261	0.0133
0.2826	0.1467
0.4348	0.3600
0.4783	0.3467
0.3913	0.0800
0.3043	0.0000
0.3478	0.1467
0.2826	0.0000
0.0435	0.3333
-	0.0000
-	0.3467
-	0.3467
-	0.3600
-	0.0000
-	0.1067
-	0.3867
-	0.0000
-	0.0000
-	0.3333
-	0.0000
-	0.0000
-	0.3733
-	0.2800
-	0.3600
-	0.0533
-	0.0000
-	-
-	-
-	-
-	-
-	-
-	-
0.9655	0.4130

2	5
0.3600	0.1818
0.3600	0.1818
0.3600	0.1818
0.3600	0.1818
0.3600	0.1818
0.3600	0.1818
0.3600	0.1818
0.3600	0.1818
0.3600	0.1818
0.3600	0.1818
0.3600	0.1753
0.3600	0.1753
0.3600	0.1818
0.3600	0.1818
0.3600	0.1818
0.3280	0.1818
0.3600	0.1818
0.3600	0.1818
0.3600	0.1818
0.3600	0.1753
0.3600	0.1818
0.3600	0.1818
0.3600	0.1818
0.3600	0.1818
0.3600	0.1818
0.3600	0.1753
0.3600	0.1818
0.3600	0.1818
0.3600	0.1818
0.3600	0.1818
-	0.1883
-	0.1883
-	0.1883
-	0.1883
-	0.1883
-	0.1883
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-	0.1883
-	0.1883
-	0.1883
-	0.1883
-	0.1883
-	0.1883
-	0.1883
-	0.1883
-	0.1883
-	-
-	-
-	-
-	-
-	-
-	-
1.0000	1.0000

3	4
0.9394	0.1646
0.0606	0.3291
0.0000	0.2278
0.0606	0.2278
0.2727	0.1519
0.0303	0.2278
0.9697	0.1266
0.0606	0.1772
0.6970	0.0127
0.8485	0.2152
0.0606	0.1646
0.0000	0.1266
0.0303	0.1392
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Spijkenisse

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0.0213	0.0192	0.0204
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0.4752	0.7660
0.4257	0.5957
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Sommelsdijk

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0.0000	0.0000	-	0.0000	0.0000
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0.0000	0.0000	-	0.0204	0.0000
0.0000	0.0196	-	0.0204	0.0000
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0.0000	0.0000	-	0.0408	0.0000
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0.0000	0.0000	-	0.0204	0.0000
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0.0600	0.0792
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0.4851	0.2368
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0.4851	0.2434
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0.4554	0.3289
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0.4851	0.3289
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0.4257	0.3289
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0.9020	0.4400
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0.1569	0.4100
0.8039	0.3300
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0.8431	0.3800
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0.0000	0.0000
0.0000	0.0612
0.0000	0.0204
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.1224
0.1569	0.0000
0.0392	0.0000
0.0196	0.0000
0.0196	0.2245
0.0196	0.0000
0.0000	0.0204
0.0196	0.0000
0.0000	0.0000
0.0196	0.0204
0.0000	0.0000
0.0588	0.0000
0.0000	0.0000
0.0196	0.0000
0.0196	0.0000
0.0588	0.0408
0.0000	0.0612
0.0196	0.0816
0.0000	0.0000
0.0000	0.0000
0.0196	0.0000
0.0196	0.0408
0.0000	0.0204
0.0000	0.0612
0.0000	0.1224
0.0000	0.0612
0.0392	0.0000
0.0588	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0196	0.0000
0.0196	0.0000
0.0196	0.0000
0.0392	-
0.3137	-
0.0392156862745098	0.0612244897959184

2	4
0.0000	0.0000
0.0000	0.0000
0.0204	0.0196
0.0000	0.0000
0.0204	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0196
0.0000	0.0392
0.0000	0.0196
0.0000	0.0196
0.0000	0.0000
0.0000	0.0196
0.0000	0.0588
0.2653	0.0196
0.0204	0.0000
0.0204	0.0000
0.0204	0.1569
0.0000	0.0000
0.0000	0.0196
0.0204	0.0000
0.0000	0.0000
0.0612	0.0196
0.0000	0.0000
0.0612	0.0196
0.0000	0.0000
0.0204	0.0000
0.0204	0.0000
0.0612	0.0392
0.0000	0.0392
0.0000	0.0784
0.0000	0.0000
0.0000	0.0196
0.0000	0.0000
0.0000	0.0588
0.0000	0.0000
0.0000	0.0392
0.0000	0.0588
0.0000	0.1373
0.0204	0.0000
0.1224	0.0392
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0612	-
0.1633	-
-	-
0.0588	0.0408

Capelle aan de IJssel

2	3	4
0.0000	0.0000	0.0000
-	0.0000	-
-	0.0000	-
-	0.0263	-
-	0.0263	-
-	0.1053	-
-	0.0000	-
-	0.0000	-
-	0.0263	-
-	0.0000	-
-	0.0263	-
-	0.0263	-
-	0.0263	-
-	0.0263	-
-	0.0000	-
-	0.0000	-
-	0.0000	-
-	0.0263	-
-	0.0000	-
-	0.0000	-
-	0.0263	-
-	0.0000	-
-	0.0000	-
-	0.0000	-
-	0.0000	-
-	0.0000	-
-	0.0263	-
-	0.0263	-
-	0.0263	-
-	0.0263	-
-	0.0263	-
-	0.0526	-
-	0.0263	-
-	0.0000	-
-	0.0000	-
-	0.0526	-
-	0.3947	-
-	0.0000	-
0	0.0526315789473684	0

Vlissingen

1	3
0.9677	0.0000
0.0645	-
0.0645	-
0.0645	-
0.0645	-
0.0645	-
0.0645	-
0.0645	-
0.0645	-
0.0645	-
0.0645	-
0.0645	-
0.0645	-
0.0645	-
0.0968	-
0.0645	-
0.0645	-
0.0645	-
0.0645	-
0.9677	-
0.0645	-
0.0968	-
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0.0645	-
0.0645	-
0.0645	-
0.0645	-
0.0645	-
0.0645	-
0.0645	-
0.0645	-
0.0645	-
0.0645	-
0.0645	-
0.0645	-
0.0645	-
0.0645161290322581	0

Breda

1	2	3	4	5
0.0000	0.0000	0.0385	0.0000	0.0200
0.0000	0.0000	0.0000	-	0.0000
0.0000	0.0000	0.0192	-	0.0000
0.0612	0.0588	0.0385	-	0.0000
0.0000	0.0000	0.0000	-	0.0000
0.0000	0.0000	0.0000	-	0.0000
0.0000	0.1373	0.0385	-	0.0000
0.0408	0.0000	0.0000	-	0.0200
0.0000	0.0784	0.0000	-	0.0000
0.0000	0.0000	0.0769	-	0.0000
0.0204	0.0000	0.0000	-	0.0000
0.0204	0.0000	0.0000	-	0.0400
0.0000	0.0000	0.0385	-	0.0200
0.0816	0.0000	0.0000	-	0.0000
0.0000	0.0000	0.0000	-	0.0200
0.0000	0.0000	0.0385	-	0.0200
0.0000	0.0000	0.0000	-	0.0000
0.0000	0.0000	0.1154	-	0.0200
0.0000	0.0000	0.0769	-	0.0200
0.0612	0.0000	0.1731	-	0.0200
0.0000	0.0000	0.0962	-	0.0000
0.0000	0.0588	0.0000	-	0.0400
0.0000	0.0784	0.0000	-	0.0200
0.0000	0.0000	0.1923	-	0.0000
0.0000	0.0000	0.0769	-	0.0000
0.0000	0.0000	0.0000	-	0.0200
0.0000	0.0196	0.0000	-	0.0200
0.0204	0.0196	0.0000	-	0.0200
0.0000	0.0000	0.0962	-	0.0200
0.0000	0.0196	0.0000	-	0.0200
0.0000	0.0196	0.0000	-	0.0200
0.0000	0.0000	0.0000	-	0.0000
0.0000	0.0196	0.0000	-	0.0200
0.0000	0.0000	0.0000	-	0.5200
0.0000	0.0000	0.0000	-	0.0000
0.0000	0.0392	0.0000	-	0.0000
0.0204	0.0000	0.0000	-	0.0000
0.0000	0.0000	0.0000	-	0.0000
0.0000	0.0000	0.0577	-	0.0000
0.0000	0.0000	0.0000	-	0.0200
0.0000	0.0392	0.0769	-	0.0200
0.0000	0.0000	0.1346	-	0.0600
0.0000	0.0000	0.0000	-	0.0200
0.0000	0.0000	0.0000	-	0.0000
0.0000	0.0000	0.0000	-	0.0200
0.0000	0.0000	0.0000	-	0.0000
0.0000	0.0000	0.0000	-	0.0200
0.0000	0.0000	0.0000	-	0.0000
0.0816	0.0000	0.0000	-	0.0200
-	0.0000	0.1538	-	0.0200
-	0.0000	0.0000	-	-
-	-	0.0000	-	-
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1	2
0.9804	0.8163
0.4118	0.9592
0.9020	0.9796
0.9804	0.8776
0.9804	0.9592
0.9608	0.9388
0.3922	0.9796
0.9804	0.7755
0.9020	0.9796
0.9020	0.9388
0.6078	0.9796
0.6667	0.9592
0.9608	0.8776
0.7255	0.8571
0.8824	0.7959
0.9804	0.8980
0.4118	0.8776
0.9608	0.5306
0.8824	0.9796
0.8431	0.8980
0.3529	0.7959
0.9608	0.7347
0.7843	0.7347
0.9608	0.7551
0.9020	0.3878
0.9020	0.8163
0.9804	0.7347
0.9608	0.8163
0.9804	0.9796
0.9804	0.9796
0.9608	0.8367
0.9020	0.8776
0.9804	0.5102
0.4118	0.9796
0.8824	0.6939
0.2549	0.7551
0.7843	0.7959
0.9608	0.7551
0.9020	0.7551
0.9804	0.7755
0.5490	0.7551
0.9804	0.9388
0.9608	0.9592
0.9608	0.9796
0.9804	0.9796
0.9804	0.8980
0.9804	0.8571
0.9804	0.7551
0.9804	0.8163
-	0.9796
-	0.8980
-	-
1.0000	1.0000

1	3
0.4951	0.7959
0.2136	0.8980
0.4563	0.9796
0.4951	0.8776
0.4854	0.8571
0.4854	0.9184
0.2233	0.6122
0.4951	0.8571
0.4660	0.7959
0.4563	0.9796
0.3495	0.8367
0.3301	0.8163
0.4854	0.8163
0.3883	0.8571
0.4272	0.8571
0.4951	0.8163
0.2330	0.9796
0.4854	0.8571
0.4272	0.9796
0.4078	0.9796
0.2039	0.7755
0.4854	0.9796
0.3981	0.6327
0.4854	0.9796
0.4369	0.9796
0.4660	0.2041
0.4854	0.8776
0.4854	0.9388
0.4951	0.7347
0.4951	0.8776
0.4757	0.8980
0.4175	0.9796
0.4854	0.9796
0.2330	0.6735
0.4078	0.9184
0.1553	0.4898
0.3786	0.9796
0.4854	0.7755
0.4175	0.7551
0.4854	0.8776
0.3010	0.7551
0.4951	0.7551
0.4854	0.9796
0.4757	0.8776
0.4951	0.9592
0.4854	0.8571
0.4854	0.7143
0.4951	0.7959
0.4951	0.5510
-	1.0000
-	1.0000
-	1.0000
1.0000	1.0000

2	3
0.0000	0.0097
0.0000	0.0000
0.0000	0.0097
0.0192	0.0000
0.0000	0.0000
0.0000	0.0000
0.1538	0.0000
0.0000	0.0000
0.0769	0.0000
0.0000	0.0388
0.0000	0.0000
0.0000	0.0000
0.0000	0.0097
0.0000	0.0000
0.0385	0.0000
0.0000	0.0097
0.0000	0.0000
0.0000	0.0291
0.0000	0.0194
0.0000	0.0583
0.0000	0.0291
0.0962	0.0000
0.1538	0.0000
0.0000	0.0874
0.0000	0.0194
0.0000	0.0000
0.0385	0.0000
0.0385	0.0000
0.0000	0.0194
0.0577	0.0000
0.0385	0.0000
0.0000	0.0000
0.0385	0.0000
0.0000	0.0000
0.0000	0.0000
0.0577	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0962	0.0194
0.0000	0.0291
0.0000	0.0097
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0583
0.0000	0.0000
-	0.0000
0.0392	0.0000

1	2	4	5
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0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0435	0.0417
0.0000	0.0588	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0196	0.0870	0.0000
0.0000	0.0000	0.0217	0.0417
0.0000	0.0000	0.1304	0.0000
0.0000	0.0000	0.0000	0.0417
0.0204	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0204	0.0000	0.1304	0.0208
0.0000	0.0000	0.0000	0.1042
0.0000	0.0000	0.0217	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0980	0.0217	0.1042
0.0000	0.0588	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.1087	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0217	0.0000
0.0000	0.0000	0.0217	0.0208
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0208
0.0000	0.0000	0.0000	0.1667
0.0000	0.0000	0.0217	0.0000
0.0204	0.0000	0.0000	0.0000
0.0000	0.0588	0.0435	0.0208
0.0000	0.0000	0.0000	0.0000
0.0000	0.0980	0.0000	0.0208
0.0000	0.0000	0.0217	0.0833
0.0816	0.0588	0.0000	0.0208
0.0000	0.0588	0.0000	0.0208
0.0000	0.0000	0.0000	0.0000
0.0000	0.0784	0.0000	0.0000
0.0000	0.0000	0.0435	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0204	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0208
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0208
0.0000	0.0784	0.0435	0.0625
0.0000	0.0000	-	0.0000
0.0000	0.0000	-	0.0000
0.0000	0.0000	-	-
-	0.0392	-	-
-	0.0392	-	-
0	0	0.0652173913043478	0.0625000000000000

1	2
0.8627	0.9592
0.9412	0.9796
0.9412	0.9592
0.8627	0.9592
0.9216	0.9796
0.9412	0.9796
0.3725	0.9796
0.9412	0.9592
0.8824	0.9796
0.9412	0.9592
0.7843	0.9796
0.9412	0.9796
0.9020	0.8776
0.9412	0.9592
0.9412	0.9796
0.9412	0.9592
0.9412	0.9592
0.9412	0.6122
0.9412	0.9796
0.9412	0.7551
0.9412	0.9592
0.8824	0.9592
0.9216	0.9796
0.9608	0.9592
0.9608	0.9592
0.9216	0.6939
0.9608	0.9592
0.9020	0.9592
0.9412	0.9796
0.8824	0.9592
0.9608	0.9796
0.8824	0.9796
0.9412	0.9796
0.9804	0.9388
0.9608	0.9796
0.8824	0.9388
0.9412	0.9592
0.9020	0.0204
0.9608	0.9796
0.9608	0.9592
0.9020	0.9592
0.9608	0.9388
0.9216	0.9592
0.9020	0.9796
0.8824	0.9796
0.9608	0.2245
0.9412	0.9592
0.9608	0.9592
0.9608	0.9184
-	1.0000
-	1.0000
-	-
1.0000	0.9804

1	4
0.3918	0.9796
0.4433	0.9592
0.4433	0.9388
0.3711	0.9592
0.4330	0.9796
0.4536	0.9796
0.1546	0.9796
0.4433	0.9796
0.4021	0.9592
0.4433	0.9796
0.3093	0.9796
0.4536	0.9796
0.4227	0.7959
0.4433	0.6735
0.4639	0.6122
0.4433	0.9592
0.4433	0.9592
0.4433	0.8776
0.4536	0.9796
0.4433	0.9592
0.4536	0.9184
0.4124	0.8367
0.4433	0.9592
0.4639	0.9796
0.4639	0.2245
0.4330	0.9796
0.4433	0.9592
0.4021	0.2449
0.4433	0.9592
0.4227	0.7347
0.4433	0.9796
0.3918	0.9592
0.4639	0.9796
0.4639	0.9592
0.4639	0.9388
0.3711	0.9388
0.4433	0.8776
0.4021	0.9388
0.4639	0.9796
0.4433	0.9592
0.4021	0.9388
0.4536	0.9592
0.4227	0.9796
0.4227	0.9592
0.4227	0.9592
0.4433	0.9796
0.4742	-
0.4639	-
0.4536	-
-	-
-	-
-	-
1.0000	1.0000

2	4
0.0000	0.0000
0.0000	0.0000
0.0000	0.0309
0.0217	0.0000
0.0000	0.0000
0.0652	0.0000
0.0000	0.0000
0.0000	0.0515
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0217	0.0103
0.0000	0.0722
0.0000	0.0000
0.0000	0.0103
0.0000	0.0000
0.0652	0.0103
0.0435	0.0000
0.0000	0.0000
0.0000	0.0722
0.0000	0.0000
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0.0000	0.0000
0.0000	0.0206
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0309
0.0000	0.0103
0.1087	0.0309
0.0000	0.0000
0.1304	0.0000
0.0000	0.0000
0.0652	0.0000
0.0217	0.0000
0.0000	0.0000
0.0217	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0435	0.0103
0.0000	-
0.0000	-
0.0000	-
0.0217	-
0.1087	-
-	-
0.0588	0.0000

Bergen op Zoom

3	4
0.0000	0.0408
0.0000	0.0000
0.0000	0.0612
0.0000	0.0000
0.0000	0.0000
0.0000	0.0204
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0816
0.0192	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0204
0.0000	0.0000
0.0000	0.0000
0.0000	0.0204
0.0000	0.0000
0.0000	0.0000
0.0000	0.0408
0.0000	0.0612
0.0000	0.1429
0.0000	0.0204
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0408
0.0577	0.0000
0.0000	0.0000
0.0000	0.2449
0.0000	0.0000
0.0192	0.0408
0.0000	0.0204
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0204
0.0000	0.0204
0.0385	0.0000
0.0192	0.0000
0.0000	0.0000
0.0000	0.0816
0.0192	0.0612
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.1837
0.0000	0.0000
0.0000	-
0.0000	-
0.0192	-
0	0.0612244897959184

3	4
0.0204	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0612	0.0000
0.0000	0.0000
0.0000	0.0385
0.0204	0.0000
0.0408	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0204	0.0000
0.0000	0.0000
0.0000	0.0962
0.0000	0.0000
0.0204	0.0000
0.0000	0.0000
0.0204	0.0000
0.0612	0.0000
0.0612	0.0000
0.0000	0.1346
0.0000	0.0000
0.0408	0.0192
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0408	0.0000
0.0408	0.0000
0.0408	0.0192
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.1731
0.0000	0.0000
0.0000	-
0.0000	-
0.0204	-
0.0000	0.0408

4
0.0000
0.1176
0.0000
0.0000
0.0588
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0588
0.0588235294117647

Voorburg

1	2	3	5
0.0000	0.0000	0.0526	0.0000
-	0.0000	0.0263	-
-	0.0000	0.0263	-
-	-	0.0263	-
-	-	0.0263	-
-	-	0.0526	-
-	-	0.2368	-
-	-	0.0526	-
-	-	0.0263	-
-	-	0.0526	-
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-	-	0.0000	-
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-	-	0.0000	-
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-	-	0.0000	-
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-	-	0.0263	-
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-	-	0.5789	-
0	0	0.0526315789473684	0

2	3
0.0000	0.0000
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0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0196	0.0000
0.0000	0.0192
0.0000	0.0000
0.0196	0.0000
0.0196	0.0000
0.0000	0.0000
0.0000	0.0192
0.0196	0.0192
0.0196	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0192
0.0196	0.0000
0.0000	0.0577
0.0000	0.0000
0.0000	0.0385
0.0196	0.0000
0.0000	0.0000
0.0588	0.0000
0.0392	0.0192
0.0000	0.0577
0.0000	0.0577
0.0000	0.0000
0.0000	0.0000
0.0000	0.0192
0.0000	0.0385
0.0000	0.0000
0.0000	0.0000
0.0000	0.1923
0.0000	0.0000
0.0392	0.0000
0.0000	0.0000
0.0000	0.1154
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0385
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
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-	0.0962
0.0196078431372549	0.0384615384615385

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0.0000	0.0000
0.0385	0.0000
0.0000	0.0196
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0392
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0192	0.0196
0.0000	0.0196
0.0000	0.0196
0.0192	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0196
0.0000	0.0196
0.0385	0.0196
0.0000	0.0588
0.0000	0.0000
0.0000	0.0196
0.0577	0.0196
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0.0000	0.0784
0.0000	0.0588
0.0000	0.0000
0.0000	0.0000
0.0000	0.0196
0.0000	0.0392
0.0000	0.0196
0.0000	0.0000
0.0000	0.0980
0.0192	0.0196
0.0192	0.0000
0.0000	0.0000
0.0000	0.0392
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0192	0.0196
0.0000	0.0000
0.0000	0.0588
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.3654	0.0000
-	0.0392
0.0392	0.0000

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0.0000	0.0392	0.0196	0.0000
0.0204	0.0392	0.0196	0.0000
0.0000	0.0000	0.0196	0.0588
0.0000	0.0000	0.0196	0.0000
0.0408	0.0196	0.0196	0.0588
0.0000	0.0392	0.0196	0.0196
0.0000	0.0000	0.0196	0.0980
0.0204	0.0392	0.0196	0.0000
0.0204	0.0000	0.0196	0.0000
0.0204	0.0000	0.0392	0.0000
0.0000	0.0784	0.0196	0.0000
0.0000	0.0196	0.0196	0.0000
0.0204	0.0196	0.0392	0.0000
0.0000	0.0196	0.0196	0.0000
0.0204	0.0000	0.0392	0.0000
0.0000	0.0000	0.0196	0.0000
0.0204	0.0000	0.0196	0.0000
0.0204	0.0784	0.0196	0.0784
0.0000	0.0000	0.0196	0.0392
0.0000	0.0000	0.0196	0.0000
0.0000	0.0000	0.0196	0.0980
0.0204	0.0196	0.0196	0.0000
0.0000	0.0000	0.0196	0.0000
0.0000	0.0392	0.0196	0.0000
0.0204	0.2549	0.0196	0.0000
0.0000	0.0588	0.0196	0.0000
0.0000	0.0196	0.9608	0.0000
0.0000	0.0000	0.0196	0.0196
0.0000	0.0000	0.0196	0.0000
0.0204	0.0196	0.0196	0.0000
0.0000	0.0196	0.0196	0.0000
0.0204	0.0196	0.0196	0.0000
0.0000	0.0588	0.0196	0.0000
0.0000	0.0000	0.0196	0.0000
0.0204	0.0000	0.0196	0.0196
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0.3265	0.0000	0.0196	0.0000
0.0204	0.0000	0.0392	0.0000
0.0000	0.0000	0.0196	0.0000
0.0204	0.0000	0.0588	0.0196
0.0204	0.0000	0.0196	0.0000
0.0204	0.0784	0.0196	0.0000
0.0000	0.0000	0.0196	0.0000
0.0000	0.0000	0.0196	0.0000
0.0408	0.0000	0.0196	0.0000
0.0000	0.0196	0.0196	0.0000
0.0204	0.0000	0.1765	0.0000
-	0.0392	0.0588	0.0392
-	0.1765	0.0196	0.0000
0.0204081632653061	0.0392156862745098	0.0392156862745098	0

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0.0196	0.0000
0.0392	0.0000
0.0196	0.0000
0.0196	0.0000
0.0196	0.0392
0.0196	0.0000
0.0196	0.0000
0.0196	0.0000
0.0784	0.0000
0.0196	0.0000
0.0196	0.0000
0.0196	0.0000
0.0196	0.0000
0.0196	0.0098
0.0196	0.0098
0.0196	0.0000
0.0196	0.0000
0.0196	0.0098
0.0980	0.0000
0.0196	0.0098
0.0196	0.0098
0.0196	0.0000
0.0196	0.0098
0.0196	0.0000
0.0196	0.0000
0.2549	0.0000
0.0784	0.0000
0.0196	0.4804
0.0196	0.0000
0.0196	0.0000
0.0196	0.0000
0.0392	0.0000
0.0196	0.0000
0.0196	0.0000
0.0196	0.0098
0.0196	0.0098
0.0196	0.0000
0.0196	0.0000
0.0196	0.0000
0.0196	0.0196
0.0196	0.0000
0.0196	0.0000
0.0196	0.0000
0.0392	0.0000
0.0392	0.0000
0.0196	0.0000
0.0196	0.0098
0.0196	0.0098
0.0196	0.0686
0.0196	0.0392
0.0588	0.0196
-	-
0.0196	0.0196

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0.0204	0.0000	0.0000	0.0417	0.0000
0.0000	0.0000	0.0192	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0200	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0208	0.0000
0.0816	0.0000	0.0000	0.0208	0.0000
0.0000	0.0000	0.0192	0.0000	0.0000
0.0816	0.0600	0.0385	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0192	0.0000	0.0000
0.0204	0.0000	0.0000	0.0000	0.0204
0.1224	0.0000	0.0385	0.0208	0.0204
0.0204	0.0000	0.0385	0.0000	0.0000
0.1020	0.0000	0.0385	0.0417	0.0204
0.0204	0.0000	0.0577	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0204	0.0000	0.0385	0.0208	0.2041
0.0000	0.0200	0.0000	0.0000	0.0408
0.0000	0.0000	0.0000	0.0000	0.0204
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0200	0.0000	0.0000	0.0204
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0192	0.0000	0.0204
0.0000	0.0000	0.0000	0.0000	0.0000
0.0204	0.0000	0.0000	0.0000	0.0204
0.0000	0.0000	0.0385	0.0208	0.0000
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0.0000	0.0000	0.0000	0.0417	0.0204
0.0816	0.0200	0.0192	0.0833	0.0000
0.0408	0.0000	0.0000	0.0000	0.0000
0.0204	0.0000	0.0000	0.0208	0.0000
0.0000	0.0000	0.1346	0.0625	0.0000
0.0000	0.0400	0.0000	0.0625	0.0000
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0.0000	0.0000	0.0000	0.0208	0.0000
0.0204	0.0000	0.0000	0.0417	0.0204
0.1020	0.0000	0.0000	0.2708	0.0000
0.0000	0.0200	0.0000	0.0208	0.0204
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0204
0.0000	0.0000	0.0000	0.0000	0.1837
0.0000	0.0000	0.0000	0.0000	0.0204
0.1837	0.0000	0.0000	0.0000	0.0204
0.0000	0.0000	0.0000	0.0000	0.0000
0.0204	0.0000	0.0000	0.0000	0.0204
0.0000	0.0000	0.0192	0.0000	0.0000
0.1224	0.0000	0.0192	-	0.0408
-	0.0800	0.0000	-	-
-	-	0.0000	-	-
-	-	0.2115	-	-
0.102040816326531	0	0.0384615384615385	0.0208333333333333	0.0408163265306122

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0.0000	0.0000
0.0000	0.0204
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0.0800	0.0000
0.0000	0.0000
0.0000	0.0612
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0600	0.0000
0.0000	0.0000
0.0800	0.0000
0.0200	0.0000
0.0200	0.0000
0.0000	0.0000
0.0000	0.0204
0.0000	0.0000
0.0000	0.0000
0.0000	0.0204
0.0000	0.0000
0.0000	0.0000
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0.0000	0.0204
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0204
0.0000	0.0204
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0400	0.0204
0.0000	0.0408
0.0000	0.0612
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.1600	0.0612
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0800	0.0816
-	0.1020
-	-
-	-
0.0204	0.0200

1	4
0.2867	0.9796
0.3067	0.9796
0.2867	0.9796
0.3067	0.9796
0.3000	0.9796
0.3133	0.9796
0.3067	0.9796
0.2933	0.9796
0.3133	0.9184
0.3067	0.9796
0.3133	0.9592
0.2933	0.9796
0.3133	0.9796
0.3067	0.9796
0.3133	0.7143
0.3067	0.9796
0.3067	0.9796
0.3067	0.9796
0.3067	0.9796
0.3067	0.9796
0.3133	0.9796
0.3067	0.9796
0.3067	0.9796
0.2867	0.9796
0.3133	0.9796
0.2933	0.9796
0.3133	0.9796
0.3067	0.3061
0.3067	0.9796
0.3067	0.9796
0.3067	0.9796
0.3067	0.9796
0.3000	0.9796
0.3067	0.9796
0.3067	0.9592
0.3000	0.9796
0.3133	0.9796
0.2867	0.9796
0.3067	0.7959
0.3067	0.9796
0.3067	0.9796
0.3000	0.9796
0.3133	0.9796
0.2933	0.9796
0.3067	0.9796
0.3067	0.9796
0.3067	0.9796
0.3133	0.9796
0.3133	0.9796
0.3200	-
-	-
-	-
-	-
1.0000	1.0000

2	4
0.4400	0.3267
0.4600	0.3267
0.4700	0.3267
0.4500	0.3267
0.4500	0.3267
0.4600	0.3267
0.4600	0.3200
0.4600	0.3267
0.4400	0.3000
0.4600	0.3267
0.4000	0.3200
0.4600	0.3267
0.4400	0.3267
0.4500	0.3267
0.4600	0.1933
0.4600	0.3267
0.4600	0.3267
0.4600	0.3200
0.4700	0.3267
0.4600	0.3267
0.4600	0.3267
0.4700	0.3267
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0.4700	0.3267
0.4300	0.3267
0.4400	0.3267
0.4700	0.3267
0.4700	0.0600
0.4600	0.3267
0.4700	0.3267
0.4500	0.3267
0.4600	0.3267
0.4500	0.3267
0.4400	0.3200
0.4700	0.3267
0.4500	0.3267
0.4700	0.3267
0.4600	0.2400
0.4500	0.3267
0.4400	0.3267
0.4600	0.3267
0.4600	0.3267
0.4600	0.3267
0.4300	0.3267
0.4200	0.3267
0.4600	0.3267
0.4500	0.3267
0.4400	0.3267
0.4700	-
0.4700	-
-	-
-	-
1.0000	0.9792

3	4
0.8333	0.4300
0.9792	0.5000
0.7917	0.4700
0.9167	0.4600
0.5000	0.5100
0.9583	0.5100
0.9792	0.5000
0.9792	0.4600
0.8958	0.5100
0.9583	0.5000
0.9792	0.5000
0.9375	0.5100
0.9792	0.4400
0.9792	0.3700
0.9792	0.5000
0.9792	0.4700
0.9375	0.5000
0.9792	0.4200
0.7708	0.4900
0.9583	0.4200
0.9792	0.4300
0.8958	0.4500
0.9375	0.5000
0.9583	0.3600
0.9167	0.3700
0.9167	0.4000
0.9792	0.4800
0.9375	0.4900
0.1458	0.5000
0.6250	0.4100
0.9792	0.5100
0.7708	0.4400
0.9375	0.4700
0.9583	0.3600
0.7917	0.4300
0.9375	0.4500
0.8958	0.4900
0.9792	0.2500
0.7917	0.5100
0.9375	0.5000
0.9167	0.5000
0.4583	0.5100
0.8958	0.4900
0.9375	0.3700
0.9583	0.4500
0.7083	0.3900
0.5833	0.4900
0.9792	0.4700
0.8333	-
0.9375	-
0.9792	-
0.9792	-
1.0000	1.0000

1	2	3	4	5
0.0000	0.0000	0.0000	0.0000	0.0000
0.0612	0.0000	0.0000	-	0.0000
0.1429	0.0196	0.0000	-	0.0000
0.0408	0.0000	0.0000	-	0.0000
0.0000	0.0000	0.0000	-	0.0588
0.1020	0.1765	0.0000	-	0.0000
0.0408	0.0000	0.0208	-	0.0196
0.0204	0.0000	0.0000	-	0.0000
0.0204	0.0000	0.0000	-	0.0000
0.0000	0.0000	0.0000	-	0.0000
0.0000	0.0196	0.0000	-	0.0000
0.0612	0.0196	0.0000	-	0.0000
0.0204	0.0000	0.0000	-	0.0000
0.0000	0.0000	0.0000	-	0.0000
0.0408	0.0000	0.0000	-	0.0588
0.1837	0.0196	0.0625	-	0.0000
0.0000	0.0000	0.0000	-	0.0196
0.0204	0.0000	0.0000	-	0.0000
0.0000	0.0000	0.0000	-	0.0000
0.1020	0.3137	0.0000	-	0.0196
0.0204	0.0000	0.0000	-	0.0000
0.0000	0.0392	0.0000	-	0.0000
0.0408	0.0000	0.0000	-	0.0000
0.0204	0.0784	0.0000	-	0.0196
0.0000	0.0000	0.0000	-	0.0000
0.0000	0.0000	0.0000	-	0.0000
0.0204	0.0784	0.0208	-	0.0000
0.0000	0.0196	0.0000	-	0.0000
0.0408	0.0196	0.0000	-	0.0000
0.0408	0.0196	0.0208	-	0.0000
0.0204	0.0196	0.0000	-	0.0000
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0.0204	0.0000	0.0000	-	0.0000
0.0204	0.0196	0.0000	-	0.0000
0.0204	0.0000	0.0000	-	0.0000
0.0000	0.0196	0.0000	-	0.0000
0.0000	0.0196	0.0000	-	0.0196
0.0000	0.0000	0.0000	-	0.0000
0.0204	0.0392	0.0000	-	0.0000
0.0000	0.0000	0.0000	-	0.0000
0.1429	0.0000	0.0417	-	0.0000
0.0204	0.0196	0.0000	-	0.0196
0.1224	0.0196	0.0000	-	0.0000
0.1224	0.0000	0.0000	-	0.0000
0.0204	0.0000	0.0000	-	0.0000
0.0204	0.0196	0.0000	-	0.0000
0.0408	0.0196	0.0000	-	0.0000
0.4490	0.0588	-	-	0.0000
-	0.0196	-	-	0.0000
-	0.0588	-	-	0.0000
0.183673469387755	0.0392156862745098	0	0	0

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0.1569	0.6531
0.1176	0.8367
0.8431	0.7143
0.6275	0.7347
0.8039	0.8980
0.7451	0.9592
0.8039	0.4082
0.2745	0.5714
0.9608	0.4898
0.1176	0.2041
0.5294	0.7959
0.9412	0.7755
0.7255	0.2857
0.5882	0.1429
0.6667	0.7143
0.2549	0.2041
0.7647	0.2041
0.7451	0.7143
0.5490	0.4694
0.9412	0.1224
0.1569	0.6735
0.2353	0.7755
0.5294	0.6531
0.6667	0.0816
0.4314	0.8980
0.6275	0.4286
0.8039	0.0000
0.6667	0.4082
0.8824	0.7755
0.1765	0.8571
0.7647	0.7347
0.9216	0.6531
0.8627	0.9184
0.8431	0.5306
0.6471	0.7347
0.7451	0.1633
0.1176	0.8367
0.7647	0.3061
0.6078	0.6122
0.5294	0.5918
0.0784	0.3673
0.9608	0.7347
0.2353	0.7959
0.9216	0.7551
0.3529	0.7551
0.8431	0.3061
0.5294	0.8163
0.5490	0.9592
0.8824	0.9592
-	0.7959
-	0.9184
-	-
0.9796	0.9608

1	3
0.4343	0.4286
0.4545	0.3061
0.0000	0.2449
0.0707	0.3878
0.0909	0.4694
0.2727	0.3061
0.0808	0.2245
0.4545	0.2653
0.0101	0.3265
0.4040	0.4286
0.3737	0.2653
0.0000	0.4490
0.0000	0.2449
0.2525	0.4082
0.0202	0.1224
0.4545	0.7551
0.0505	0.5714
0.0303	0.5714
0.0606	0.5102
0.0000	0.4694
0.4747	0.3673
0.2121	0.3878
0.0202	0.4082
0.0000	0.4082
0.3333	0.2653
0.1616	0.5102
0.0606	0.7143
0.2121	0.3265
0.0202	0.6735
0.4747	0.4082
0.0505	0.2449
0.0000	0.3265
0.0101	0.4082
0.0000	0.3265
0.0808	0.3878
0.0000	0.5510
0.4141	0.1429
0.1616	0.5918
0.0303	0.3265
0.3535	0.3469
0.4343	0.3673
0.0000	0.3061
0.4747	0.2857
0.0000	0.4286
0.4747	0.3469
0.1010	0.4286
0.2525	0.2653
0.4646	0.4286
0.4848	-
-	-
-	-
-	-
0.4898	1.0000

Rotterdam-Centrum

1	2	3	5
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.4000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.2000	0.0000
0.0000	0.0000	0.2000	0.0000
0.0000	0.0000	-	-
0	0	0.6000000000000000	0

Vlaardingen

1	2	3	4
0.0000	0.0000	0.1961	0.0000
0.0000	0.0000	0.0196	0.0000
0.0000	0.0000	0.1373	-
0.0204	0.0392	0.0392	-
0.0000	0.0000	0.5882	-
0.0000	0.0000	0.0000	-
0.0000	0.0000	0.0196	-
0.0204	0.0392	0.0392	-
0.0204	0.0000	0.0588	-
0.0000	0.0000	0.0392	-
0.0000	0.0000	0.0980	-
0.0000	0.0392	0.1373	-
0.0000	0.0000	0.0000	-
0.0000	0.0392	0.0588	-
0.0408	0.0196	0.0196	-
0.0000	0.0196	0.0196	-
0.0000	0.0000	0.0196	-
0.0204	0.0000	0.1176	-
0.0000	0.0392	0.0196	-
0.0000	0.0000	0.0196	-
0.0000	0.0000	0.0392	-
0.0204	0.0000	0.0196	-
0.0000	0.0392	0.0196	-
0.0000	0.0392	0.0196	-
0.0204	0.0000	0.0196	-
0.0000	0.0196	0.0196	-
0.0000	0.0000	0.0980	-
0.0000	0.0000	0.0392	-
0.0000	0.0000	0.3725	-
0.0204	0.0392	0.0000	-
0.0000	0.0196	0.0000	-
0.0000	0.0196	0.0588	-
0.0204	0.0392	0.0392	-
0.0000	0.0000	0.0392	-
0.0204	0.1176	0.0784	-
0.1837	0.0000	0.0000	-
0.1020	0.0000	0.1176	-
0.0000	0.0392	0.0196	-
0.0816	0.0000	0.0784	-
0.0000	0.0980	0.0000	-
0.0408	0.0000	0.0392	-
0.0000	0.0000	0.0196	-
0.0000	0.1373	0.0196	-
0.0000	0.0000	0.0000	-
0.0000	0.0392	0.1765	-
0.0204	0.0196	0.0000	-
0.0000	0.0000	0.0196	-
0.0000	0.0000	0.0196	-
0.0000	0.0000	0.0392	-
-	0.0000	0.1569	-
-	0.3137	0.0392	-
0.0408163265306122	0.0588235294117647	0.176470588235294	0

1	2
0.9804	0.9388
0.9804	0.9592
0.9804	0.8980
0.9804	0.9592
0.9804	0.9592
0.9804	0.9388
0.9804	0.9388
0.9412	0.9592
0.8824	0.9184
0.9804	0.9184
0.9804	0.9388
0.9804	0.9592
0.9804	0.9592
0.9804	0.9592
0.8627	0.9592
0.9804	0.9592
0.9804	0.9592
0.9804	0.9184
0.9804	0.9592
0.9804	0.9592
0.9804	0.9592
0.9804	0.9592
0.9804	0.9184
0.9804	0.9592
0.4510	0.8776
0.9804	0.9592
0.9804	0.9388
0.9804	0.9388
0.9804	0.8367
0.9216	0.9592
0.9804	0.9184
0.9804	0.9388
0.9804	0.9388
0.9804	0.9592
0.9608	0.9184
0.9804	0.9388
0.0000	0.9592
0.9804	0.9388
0.9804	0.9184
0.9804	0.9184
0.7255	0.9388
0.9804	0.9592
0.9804	0.9592
0.9804	0.9388
0.9804	0.9592
0.9804	0.8776
0.9804	0.9388
0.9804	0.9184
0.9804	0.9388
-	0.9796
-	0.8367
-	-
0.9796	1.0000

1	3
0.0000	0.1429
0.0098	0.0000
0.0294	0.1429
0.0196	0.0000
0.0196	0.5102
0.0000	0.0000
0.0098	0.0000
0.0098	0.1020
0.0490	0.0816
0.0098	0.0000
0.0000	0.0000
0.0098	0.0204
0.0000	0.0000
0.0098	0.0612
0.0784	0.0000
0.0098	0.0000
0.0098	0.0204
0.0294	0.0204
0.0098	0.0000
0.0098	0.0000
0.0196	0.0408
0.0784	0.0000
0.0098	0.0204
0.0000	0.0000
0.0588	0.0000
0.0000	0.0000
0.0098	0.0204
0.0000	0.0000
0.0000	0.3265
0.0588	0.0000
0.0098	0.0000
0.0098	0.0408
0.0098	0.0000
0.0196	0.0000
0.0196	0.0204
0.0784	0.0000
0.0882	0.1429
0.0098	0.0000
0.0294	0.0612
0.0098	0.0000
0.0882	0.0000
0.0098	0.0204
0.0098	0.0000
0.0098	0.0000
0.0196	0.1837
0.0098	0.0000
0.0098	0.0000
0.0098	0.0000
0.0196	0.0000
-	0.1633
-	0.0000
-	-
0.0000	0.1569

2	3
0.9412	0.0000
0.9608	0.4902
0.8824	0.4902
0.9608	0.4902
0.9608	0.4902
0.9412	0.4902
0.9020	0.4902
0.9216	0.4902
0.8824	0.4902
0.8824	0.4804
0.9216	0.3627
0.9608	0.1471
0.9412	0.4902
0.9608	0.4902
0.9608	0.4902
0.9608	0.4902
0.9608	0.4902
0.9020	0.4902
0.9608	0.4902
0.9412	0.4902
0.9608	0.4902
0.9412	0.4902
0.8824	0.4902
0.9412	0.4706
0.8431	0.4902
0.9412	0.4902
0.9216	0.4608
0.9216	0.4902
0.8627	0.2353
0.9608	0.4902
0.8824	0.4902
0.8824	0.4902
0.9216	0.4902
0.9608	0.4902
0.9020	0.3627
0.9216	0.4902
0.9216	0.4902
0.9412	0.4902
0.8627	0.4902
0.9216	0.4902
0.9020	0.4902
0.9608	0.4902
0.9608	0.4902
0.9216	0.4902
0.9608	0.4902
0.8824	0.4902
0.8824	0.4902
0.9020	0.4216
0.9216	0.4902
0.9608	0.4902
0.8039	0.4902
-	-
1.0000	0.9804

Dordrecht

1	2	3	5
0.0204	0.0000	0.0000	0.3725
0.0000	0.0000	0.0000	0.0196
0.0000	0.0196	0.0192	0.0000
0.0204	0.0000	0.0000	0.0000
0.1633	0.0000	0.0000	0.1569
0.0000	0.0196	0.0000	0.0196
0.0000	0.0196	0.0000	0.0000
0.0000	0.0000	0.0192	0.0392
0.0000	0.0196	0.0000	0.0196
0.0000	0.0000	0.0192	0.0000
0.0204	0.0000	0.0000	0.0000
0.0408	0.0196	0.0000	0.0196
0.0000	0.0000	0.0769	0.0196
0.0000	0.0000	0.0000	0.1569
0.0000	0.0196	0.0192	0.0196
0.1633	0.0000	0.0385	0.0196
0.0000	0.0000	0.0000	0.0980
0.0816	0.0000	0.0192	0.0980
0.0204	0.0392	0.0192	0.0196
0.1224	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0408	0.0000	0.0000	0.0196
0.0612	0.0196	0.0000	0.1373
0.0000	0.0000	0.0192	0.1373
0.0000	0.0196	0.0385	0.1176
0.0000	0.0000	0.0000	0.0196
0.0000	0.0000	0.0192	0.0000
0.0000	0.0196	0.0000	0.0196
0.0000	0.0000	0.0000	0.0196
0.0000	0.0000	0.0000	0.0000
0.0000	0.0196	0.0000	0.0000
0.0000	0.0000	0.0192	0.1176
0.0000	0.0196	0.0000	0.1176
0.0204	0.0000	0.0000	0.0000
0.0000	0.0196	0.0000	0.0196
0.0816	0.0000	0.0000	0.0392
0.0000	0.0196	0.0000	0.0000
0.0000	0.0000	0.0192	0.0196
0.0612	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0204	0.0000	0.0192	0.0196
0.0000	0.0196	0.0000	0.0784
0.0000	0.0196	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0408	0.0000	0.0962	0.0196
0.0204	0.0000	0.0192	0.0000
0.1224	0.0196	0.0000	0.0588
0.0408	0.0000	0.0962	0.0000
0.1429	0.2353	0.0000	0.0000
-	0.0196	0.0000	0.0000
-	0.1373	0.2115	0.0000
-	-	0.0192	-
0.102040816326531	0.0392156862745098	0.0192307692307692	0.156862745098039

1	2
0.1176	0.4286
0.1569	0.2041
0.8824	0.3878
0.2157	0.5306
0.8431	0.2449
0.3922	0.5102
0.4902	0.3061
0.3922	0.3673
0.0588	0.8776
0.2745	0.2449
0.7647	0.4898
0.7059	0.3469
0.2549	0.7959
0.3333	0.7143
0.4314	0.4082
0.9412	0.1429
0.2941	0.5510
0.1765	0.3061
0.5294	0.7143
0.1373	0.6531
0.6078	0.2449
0.5882	0.3469
0.2353	0.8776
0.7647	0.4490
0.2745	0.2857
0.4118	0.2245
0.6667	0.3878
0.3922	0.4898
0.5686	0.2653
0.3725	0.6939
0.2549	0.2245
0.5490	0.3265
0.8039	0.5102
0.0980	0.6735
0.0784	0.4694
0.2745	0.2041
0.5098	0.7755
0.9412	0.3878
0.3137	0.3265
0.5882	0.2857
0.7059	0.2041
0.2549	0.6531
0.2549	0.6327
0.3922	0.4490
0.3529	0.1837
0.1569	0.6122
0.4706	0.6735
0.9216	0.2449
0.8824	0.9388
-	0.4490
-	0.2653
-	-
0.9388	1.0000

1	3
0.0000	0.4898
0.4854	0.4286
0.4854	0.4286
0.0000	0.4286
0.4854	0.5918
0.4757	0.5306
0.4369	0.5918
0.0000	0.4898
0.4466	0.5306
0.4757	0.3469
0.4563	0.4898
0.4757	0.4490
0.0583	0.5714
0.0485	0.5102
0.1748	0.4694
0.4854	0.7755
0.4854	0.4694
0.0680	0.5510
0.1262	0.2857
0.0097	0.4898
0.0291	0.5918
0.0000	0.4898
0.0000	0.3673
0.0000	0.5102
0.3204	0.4082
0.0874	0.0204
0.0388	0.6531
0.3301	0.5306
0.0388	0.4490
0.0291	0.4898
0.0097	0.1837
0.0874	0.5510
0.4466	0.3469
0.0291	0.5102
0.4175	0.4898
0.0000	0.5102
0.4854	0.4082
0.0874	0.4082
0.0000	0.5306
0.4563	0.2449
0.4854	0.7143
0.3883	0.4694
0.1359	0.5102
0.4272	0.4490
0.4854	0.5306
0.3398	0.4694
0.0291	0.3878
0.4369	0.7347
0.4951	0.4490
-	0.4082
-	0.5714
-	0.4898
0.5510	0.9808

2	3
0.3462	0.3786
0.9423	0.3301
0.9615	0.4078
0.2885	0.3301
0.9423	0.3301
0.9615	0.4078
0.9231	0.4660
0.1923	0.4757
0.5577	0.3301
0.9615	0.2718
0.9615	0.4175
0.9423	0.3301
0.3846	0.2816
0.4038	0.4078
0.9615	0.4660
0.9423	0.3883
0.7885	0.4369
0.9615	0.3301
0.4038	0.2816
0.8269	0.3398
0.9615	0.3981
0.9423	0.3204
0.5385	0.3495
0.7885	0.3495
0.9615	0.2718
0.9615	0.0097
0.9615	0.3786
0.9615	0.4563
0.9615	0.3398
0.3846	0.3398
0.9615	0.1942
0.9615	0.3786
0.9615	0.2816
0.3077	0.4175
0.9615	0.3981
0.1538	0.4078
0.9808	0.3398
0.9423	0.4757
0.4615	0.3883
0.9615	0.4660
0.9423	0.3301
0.5192	0.3301
0.8077	0.4660
0.4038	0.3592
0.9615	0.4854
0.2308	0.3495
0.4038	0.3301
0.0577	0.3786
0.8269	0.3204
0.9615	0.4078
0.9615	0.4854
-	0.4757
0.9804	0.9808

1	2	3	4	5
0.0000	0.0000	0.0000	0.0204	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0612	0.0196
0.0000	0.0000	-	0.0000	0.0196
0.0204	0.0000	-	0.0204	0.0000
0.0000	0.0000	-	0.0204	0.0000
0.0000	0.0196	-	0.0204	0.0000
0.0000	0.0000	-	0.0408	0.0000
0.0000	0.0196	-	0.1020	0.0196
0.0000	0.0000	-	0.2041	0.0000
0.0000	0.0000	-	0.0000	0.0000
0.0000	0.0392	-	0.0000	0.0196
0.0000	0.0000	-	0.1633	0.0588
0.0000	0.0000	-	0.0204	0.0000
0.0000	0.0000	-	0.1837	0.0392
0.0612	0.0000	-	0.1020	0.0392
0.0000	0.0000	-	0.0000	0.0000
0.0000	0.0392	-	0.0816	0.0000
0.0000	0.0000	-	0.0204	0.0000
0.0000	0.0000	-	0.0000	0.0000
0.0408	0.0000	-	0.0408	0.1961
0.0000	0.0196	-	0.0000	0.0000
0.0000	0.0196	-	0.0408	0.0392
0.0000	0.0196	-	0.0000	0.0196
0.0204	0.0000	-	0.0204	0.0196
0.0000	0.0000	-	0.0204	0.0392
0.0000	0.0000	-	0.0612	0.0000
0.0000	0.0000	-	0.0204	0.0000
0.0000	0.0000	-	0.0000	0.0000
0.0612	0.0000	-	0.0204	0.0000
0.0000	0.0000	-	0.0204	0.0392
0.0000	0.0000	-	0.1633	0.0000
0.0612	0.0196	-	0.0000	0.0000
0.0000	0.0000	-	0.0612	0.0000
0.0000	0.0000	-	0.0000	0.0000
0.0000	0.0196	-	0.0000	0.0000
0.0000	0.0000	-	0.2041	0.0000
0.0000	0.0000	-	0.0204	0.0000
0.0000	0.0000	-	0.0408	0.0000
0.0000	0.0000	-	0.0000	0.0196
0.0408	0.0000	-	0.0204	0.0000
0.0408	0.0000	-	0.1224	0.0000
0.0204	0.0392	-	0.1429	0.0000
0.0000	0.0196	-	0.0000	0.0000
0.0204	0.0000	-	0.0000	0.0196
0.0612	0.0000	-	0.0204	0.0000
0.0000	0.0000	-	0.0000	0.0000
0.0000	0.0000	-	0.1020	0.0000
0.0000	0.0000	-	0.4082	0.0000
-	0.0000	-	-	0.1961
-	0.0784	-	-	0.0196
0	0	0	0.224489795918367	0.0392156862745098

1	2
0.0980	0.8163
0.3529	0.6122
0.4902	0.6939
0.4902	0.6122
0.9804	0.4898
0.0784	0.6531
0.9412	0.5102
0.3725	0.5510
0.9804	0.5102
0.4706	0.7755
0.9412	0.8571
0.9804	0.7959
0.9412	0.7551
0.4706	0.6327
0.6471	0.5510
0.9412	0.5918
0.9216	0.5510
0.8431	0.5918
0.9804	0.3673
0.2941	0.5306
0.9804	0.7143
0.6667	0.4694
0.9412	0.4694
0.9804	0.6531
0.5882	0.2653
0.9804	0.5714
0.9216	0.7755
0.0784	0.5306
0.3137	0.6122
0.5882	0.7347
0.9412	0.6122
0.0784	0.7959
0.4706	0.9592
0.0784	0.8163
0.9804	0.5918
0.9804	0.5510
0.0196	0.9796
0.7451	0.5510
0.0784	0.5918
0.1961	0.2653
0.9804	0.6531
0.9804	0.7959
0.0588	0.7959
0.3922	0.4694
0.8235	0.7755
0.3529	0.6531
0.8627	0.4898
0.9412	0.4490
0.9804	0.5306
-	0.8980
-	1.0000
-	-
0.8367	1.0000

1	4
0.0583	0.3878
0.1845	0.7347
0.2330	0.7551
0.2621	0.5102
0.4660	0.4490
0.0583	0.7755
0.4369	0.5510
0.1942	0.4694
0.4660	0.9796
0.2524	0.5306
0.4369	0.7959
0.4660	0.7143
0.4272	0.9796
0.2233	0.4898
0.2330	0.5306
0.4369	0.5714
0.4175	0.7755
0.3786	0.6735
0.4563	0.5510
0.1359	0.7347
0.4660	0.7347
0.2427	0.3469
0.4369	0.5306
0.4563	0.6735
0.2524	0.1429
0.4563	0.8163
0.3981	0.6735
0.0583	0.7143
0.1553	0.8163
0.2913	0.4898
0.4272	0.5306
0.0485	0.9796
0.2621	0.4490
0.0583	0.5510
0.4660	0.4898
0.4660	0.3469
0.0485	0.4286
0.2913	0.7347
0.0583	0.7551
0.1262	0.2857
0.4563	0.6122
0.4660	0.9592
0.0583	0.5306
0.2039	0.4490
0.3398	0.5510
0.1942	0.6939
0.3786	0.6735
0.4369	0.9592
0.4563	0.9796
-	-
-	-
-	-
0.8367	1.0000

1	5
0.3247	0.9796
0.3247	0.9592
0.3247	0.9796
0.3247	0.9796
0.2727	0.9796
0.3247	0.8980
0.3247	0.9592
0.3247	0.9184
0.3182	0.9184
0.3247	0.9796
0.3182	0.9388
0.3182	0.9796
0.3247	0.9796
0.3247	0.9796
0.3247	0.9796
0.3247	0.9796
0.3247	0.9796
0.3247	0.9796
0.3182	0.9796
0.3247	0.9796
0.3182	0.9592
0.3247	0.7143
0.2987	0.9796
0.3117	0.9796
0.3247	0.8980
0.3182	0.9796
0.3247	0.8776
0.3247	0.9796
0.3247	0.9796
0.3247	0.9796
0.3247	0.9796
0.3247	0.9592
0.3247	0.9796
0.3247	0.9796
0.2662	0.9592
0.3052	0.9796
0.3247	0.9796
0.3247	0.9592
0.3247	0.9388
0.3247	0.9796
0.3182	0.9184
0.2078	0.9796
0.3247	0.9796
0.3247	0.9796
0.3247	0.9796
0.3247	0.9796
0.3247	0.9796
0.3247	0.9796
0.3247	0.8980
-	0.9796
-	0.9796
-	-
1.0000	1.0000

2	4
0.0385	0.0000
0.0192	0.0000
0.0000	0.0000
0.0192	0.0000
0.0000	0.0000
0.0000	0.0000
0.0192	0.0000
0.0000	0.0000
0.0577	0.0194
0.0000	0.0388
0.0192	0.0000
0.0577	0.0000
0.0192	0.0583
0.0192	0.0000
0.0385	0.0388
0.0192	0.0291
0.0192	0.0000
0.0962	0.0000
0.0000	0.0000
0.0769	0.0000
0.0000	0.0000
0.0577	0.0000
0.0962	0.0000
0.0192	0.0000
0.0000	0.0000
0.0000	0.0097
0.0192	0.0097
0.0000	0.0194
0.0577	0.0000
0.0000	0.0000
0.0192	0.0000
0.0000	0.0583
0.0962	0.0000
0.0192	0.0097
0.0000	0.0000
0.0192	0.0000
0.0769	0.0485
0.0192	0.0000
0.0000	0.0000
0.0000	0.0000
0.0192	0.0000
0.0000	0.0194
0.0577	0.0485
0.0192	0.0000
0.0000	0.0000
0.0000	0.0000
0.0000	0.0000
0.0192	0.0097
0.0000	0.2136
0.0000	-
0.1154	-
-	-
0.0196	0.0204

Appendix C

Opening hours fixed locations

The opening hours of all fixed blood donation locations are defined in this appendix. The days are numbered, so 1 is assigned to Monday, 2 is assigned to Tuesday, etc. If the opening hours are not mentioned for a certain day than the location is closed on that day. The indicator is only necessary for opening time 800 in combination with closing time 2000. If the indicator has the value 1 than the location is open from 8.00 till 20.00. The location is open is open from 8.00 till 11.00 and from 17.00 till 20.00 if the indicator has the value 2.

Table 1: Amsterdam Plesmanlaan

day	opening time	closing time	indicator
1	1700	2000	1
2	800	2000	2
3	800	2000	2
4	800	1100	1
5	800	1530	1

Table 2: Amsterdam Valkenburgerstraat

day	opening time	closing time	indicator
1	1700	2000	1
2	1230	2000	1
3	1230	2000	1
4	1230	2000	1
5	800	1530	1

Table 3: Alkmaar

day	opening time	closing time	indicator
1	800	2000	2
2	800	2000	2
3	1700	2000	1
4	800	2000	2

Table 4: Almere

day	opening time	closing time	indicator
3	1230	2000	1
4	1700	2000	1

Table 5: Amersfoort

day	opening time	closing time	indicator
1	1700	2000	1
2	1230	2000	1
3	1230	2000	1
4	1230	2000	1
5	800	1100	1

Table 6: Haarlem

day	opening time	closing time	indicator
1	1700	2000	1
2	800	2000	2
3	800	1100	1
4	800	2000	2
5	800	1100	1

Table 7: Hilversum

day	opening time	closing time	indicator
1	1700	2000	1
2	800	2000	2
3	1700	2000	1
4	1700	2000	1

Table 8: Hoorn

day	opening time	closing time	indicator
2	1230	2000	1
3	1230	2000	1
4	1230	2000	1

Table 9: Purmerend

day	opening time	closing time	indicator
1	1230	2000	1
2	1700	2000	1
3	1700	2000	1
4	1230	2000	1

Table 10: Utrecht Leidsche Rijn

day	opening time	closing time	indicator
1	1700	2000	1
2	1230	2000	1
3	1700	2000	1
4	1230	2000	1

Table 11: Utrecht-Uithof

day	opening time	closing time	indicator
1	1230	2000	1
2	800	2000	1
3	800	2000	1
4	800	2000	1
5	800	1100	1

Table 12: Zaanstad

day	opening time	closing time	indicator
1	1230	2000	1
2	1700	2000	1
3	1700	2000	1
4	1230	2000	1

Table 13: Groningen

day	opening time	closing time	indicator
2	800	2000	1
3	800	2000	1
4	1230	2000	1
5	800	1530	1

Table 14: Emmen

day	opening time	closing time	indicator
4	1230	2000	1

Table 15: Leeuwarden

day	opening time	closing time	indicator
1	1700	2000	1
2	800	2000	1
3	800	2000	1
5	800	1530	1

Table 16: Drachten

day	opening time	closing time	indicator
1	800	2000	1
5	800	1530	1

Table 17: Zwolle

day	opening time	closing time	indicator
1	800	2000	1
3	1230	2000	1
4	1230	2000	1
5	800	1530	1

Table 18: Hoogeveen

day	opening time	closing time	indicator
2	1230	2000	1
4	1230	2000	1

Table 19: Deventer

day	opening time	closing time	indicator
2	1230	2000	1
3	1230	2000	1
5	800	1530	1

Table 20: Apeldoorn

day	opening time	closing time	indicator
2	1230	2000	1
3	1230	2000	1

Table 21: Enschede

day	opening time	closing time	indicator
1	800	2000	1
2	1230	2000	1
3	800	1100	1
5	800	1100	1

Table 22: Hengelo

day	opening time	closing time	indicator
1	1230	2000	1
2	1230	2000	1
5	800	1100	1

Table 23: Nijmegen

day	opening time	closing time	indicator
1	800	2000	2
2	800	2000	2
3	1230	2000	1
4	1230	2000	1
5	800	1530	1

Table 24: Doetinchem

day	opening time	closing time	indicator
1	1230	2000	1
4	1230	2000	1

Table 25: Ede

day	opening time	closing time	indicator
2	1230	2000	1
3	1230	2000	1
4	1230	2000	1
5	800	1100	1

Table 26: Eindhoven

day	opening time	closing time	indicator
1	800	2000	2
2	800	2000	2
3	800	2000	2
4	800	2000	2
5	800	1530	1

Table 27: Helmond

day	opening time	closing time	indicator
5	800	1530	1

Table 28: Tilburg

day	opening time	closing time	indicator
1	800	2000	2
2	800	2000	1
3	800	2000	2
4	1700	2000	1
5	800	1100	1

Table 29: Waalwijk

day	opening time	closing time	indicator
2	1700	2000	1
3	1700	2000	1
5	800	1100	1

Table 30: 's Hertogenbosch

day	opening time	closing time	indicator
1	800	2000	2
2	800	2000	2
3	800	2000	2
4	800	2000	2
5	800	1100	1

Table 31: Maastricht

day	opening time	closing time	indicator
1	800	2000	2
3	1700	2000	1
4	1230	2000	1
5	800	1100	1

Table 32: Sittard

day	opening time	closing time	indicator
2	800	2000	2
3	1230	2000	1
4	800	1100	1

Table 33: Heerlen

day	opening time	closing time	indicator
1	1230	2000	1
2	1700	2000	1
3	800	1100	1
4	1700	2000	1
5	800	1100	1

Table 34: Venlo

day	opening time	closing time	indicator
1	800	2000	2
2	1700	2000	1
3	800	2000	2
4	1700	2000	1

Table 35: Roermond

day	opening time	closing time	indicator
2	800	2000	2
3	1700	2000	1
4	800	2000	1

Table 36: Gouda

day	opening time	closing time	indicator
1	1230	2000	1
2	1230	2000	1
4	1230	2000	1
5	800	1100	1

Table 37: Rotterdam Zuid

day	opening time	closing time	indicator
1	1230	2000	1
2	1230	2000	1
3	800	2000	1
4	1230	2000	1
5	800	1530	1

Table 38: Spijkenisse

day	opening time	closing time	indicator
1	800	2000	2
3	1700	2000	1
4	1230	2000	1

Table 39: Sommelsdijk

day	opening time	closing time	indicator
3	800	1100	1
4	1230	2000	1

Table 40: Goes

1	1700	2000	1
2	800	2000	1
3	1230	1530	1
4	800	2000	2
5	800	1100	1

Table 41: Gorinchem

day	opening time	closing time	indicator
2	1230	2000	1
4	1230	2000	1

Table 42: Capelle aan de IJssel

day	opening time	closing time	indicator
2	1230	1530	1
3	1230	2000	1
4	1230	2000	1

Table 43: Vlissingen

day	opening time	closing time	indicator
1	1230	2000	1
3	1230	1530	1

Table 44: Breda

day	opening time	closing time	indicator
1	800	2000	2
2	1230	2000	1
3	1230	2000	1
4	1230	1530	1
5	800	1100	1

Table 45: Roosendaal

day	opening time	closing time	indicator
1	1700	2000	1
2	1230	2000	1
4	1230	2000	1
5	800	1100	1

Table 46: Bergen op Zoom

day	opening time	closing time	indicator
3	1230	2000	1
4	1230	2000	1

Table 47: Oosterhout

day	opening time	closing time	indicator
4	1230	2000	1

Table 48: Voorburg

day	opening time	closing time	indicator
1	1700	2000	1
2	1700	2000	1
3	1230	2000	1
5	1230	1530	1

Table 49: Zoetermeer

day	opening time	closing time	indicator
2	1230	2000	1
3	1230	2000	1

Table 50: Delft

day	opening time	closing time	indicator
1	1230	2000	1
2	1700	2000	1
3	1700	2000	1
4	800	1100	1

Table 51: Leiden

day	opening time	closing time	indicator
1	1230	2000	1
2	1230	2000	1
3	800	2000	1
4	800	2000	1
5	800	1530	1

Table 52: Velp

day	opening time	closing time	indicator
1	800	2000	2
2	800	2000	1
3	1700	2000	1
4	1230	1530	1
5	800	1100	1

Table 53: Rotterdam-Centrum

day	opening time	closing time	indicator
1	1230	2000	1
2	1230	2000	1
3	800	2000	1
5	800	1530	1