GLIMMPSE Validation Report:

GLMM(F) Example 8. Power for tests of polynomial trend for multiple between and within subject factors using 3-way orthogonal polynomial contrasts

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1. Introduction

The following report contains validation results for the JavaStatistics library, a component of the GLIMMPSE software system. For more information about GLIMMPSE and related publications, please visit

http://samplesizeshop.org.

The automated validation tests shown below compare power values produced by the JavaStatistics library to published results and also to simulation. Sources for published values include POWERLIB (Johnson *et al.* 2007) and a SAS IML implementation of the methods described by Glueck and Muller (2003).

Validation results are listed in Section 3 of the report. Timing results show the calculation and simulation times for the overall experiment and the mean times per power calculation. Summary statistics show the maximum absolute deviation between the power value calculated by the JavaStatistics library and the results obtained from SAS or via simulation. The table in Section 3.3 shows the deviation values for each individual power comparison. Deviations larger than 10^{-6} from SAS power values and 0.05 for simulated power values are displayed in red.

2. Study Design

The study design in Example 8 includes three between participant factors (A, B, and C)and three within participant factors (D, E, and F). Three sets of hypotheses are tested for each statistical test with a variety of sample sizes and mean differences.

1. The interaction of A x D
2. The interaction of A x B x D x E
3. The interaction of A x B x C x D x E x F

2.1. Inputs to the Power Calculation

2.1.1. List Inputs

Type I error rates

0.0500000

Beta scale values

9.0000000, 18.0000000, 27.0000000

Sigma scale values

1.0000000

Per group sample size values

2, 4, 6, 8, 10, 12

Statistical tests

UNIREP, UNIREP-BOX, UNIREP-GG, UNIREP-HF, WL, PBT, HLT

Power methods

cond

2.1.2. Matrix Inputs

$$\underset{(27\times 27)}{\text{Es}\,(\mathbf{X})} = I_{27}$$

$$\underset{(27\times 27)}{\mathbf{B}} = \begin{bmatrix} 1 & 0 & \dots & 0 \\ 0 & & & \vdots \\ \vdots & & & \vdots \\ 0 & \dots & \dots & 0 \end{bmatrix}$$

$$\underset{(1\times 4)}{\mathbf{\Theta}_0} = \begin{bmatrix} 0 & 0 & 0 & 0 \end{bmatrix}$$

$$\underset{(27\times 27)}{\mathbf{\Sigma}_E} = \begin{bmatrix} 1 & 2 & 3 & \dots & 27 \end{bmatrix} \times I_{27}$$

Contrasts for the test of the A x D interaction

$$\underset{(27\times 2)}{\mathbf{C}'} = \begin{bmatrix} -0.2357 & 0.1361 \\ -0.2357 & 0.1361 \\ -0.2357 & 0.1361 \\ -0.2357 & 0.1361 \\ -0.2357 & 0.1361 \\ -0.2357 & 0.1361 \\ -0.2357 & 0.1361 \\ -0.2357 & 0.1361 \\ -0.2357 & 0.1361 \\ 0.0000 & -0.2722 \\ 0.0000 & -0.2722 \\ 0.0000 & -0.2722 \\ 0.0000 & -0.2722 \\ 0.0000 & -0.2722 \\ 0.0000 & -0.2722 \\ 0.0000 & -0.2722 \\ 0.0000 & -0.2722 \\ 0.0000 & -0.2722 \\ 0.2357 & 0.1361 \\ 0.2357 & 0.1361 \\ 0.2357 & 0.1361 \\ 0.2357 & 0.1361 \\ 0.2357 & 0.1361 \\ 0.2357 & 0.1361 \\ 0.2357 & 0.1361 \\ 0.2357 & 0.1361 \\ 0.2357 & 0.1361 \end{bmatrix}$$

$$\underset{(27\times 2)}{\mathbf{U}} = \begin{bmatrix} -0.2357 & 0.1361 \\ -0.2357 & 0.1361 \\ -0.2357 & 0.1361 \\ -0.2357 & 0.1361 \\ -0.2357 & 0.1361 \\ -0.2357 & 0.1361 \\ -0.2357 & 0.1361 \\ -0.2357 & 0.1361 \\ -0.2357 & 0.1361 \\ 0.0000 & -0.2722 \\ 0.0000 & -0.2722 \\ 0.0000 & -0.2722 \\ 0.0000 & -0.2722 \\ 0.0000 & -0.2722 \\ 0.0000 & -0.2722 \\ 0.0000 & -0.2722 \\ 0.0000 & -0.2722 \\ 0.0000 & -0.2722 \\ 0.2357 & 0.1361 \\ 0.2357 & 0.1361 \\ 0.2357 & 0.1361 \\ 0.2357 & 0.1361 \\ 0.2357 & 0.1361 \\ 0.2357 & 0.1361 \\ 0.2357 & 0.1361 \\ 0.2357 & 0.1361 \\ 0.2357 & 0.1361 \end{bmatrix}$$

Contrasts for the test of the A x B x D x E interaction

$$\underset{(27\times4)}{\mathbf{C}'} = \begin{bmatrix} 0.2887 & -0.1667 & -0.1667 & 0.0962 \\ 0.2887 & -0.1667 & -0.1667 & 0.0962 \\ 0.2887 & -0.1667 & -0.1667 & 0.0962 \\ -0.0000 & 0.3333 & 0.0000 & -0.1925 \\ -0.0000 & 0.3333 & 0.0000 & -0.1925 \\ -0.0000 & 0.3333 & 0.0000 & -0.1925 \\ -0.2887 & -0.1667 & 0.1667 & 0.0962 \\ -0.2887 & -0.1667 & 0.1667 & 0.0962 \\ -0.2887 & -0.1667 & 0.1667 & 0.0962 \\ -0.0000 & 0.0000 & 0.3333 & -0.1925 \\ -0.0000 & 0.0000 & 0.3333 & -0.1925 \\ -0.0000 & 0.0000 & 0.3333 & -0.1925 \\ 0.0000 & -0.0000 & -0.0000 & 0.3849 \\ 0.0000 & -0.0000 & -0.0000 & 0.3849 \\ 0.0000 & -0.0000 & -0.0000 & 0.3849 \\ 0.0000 & 0.0000 & -0.3333 & -0.1925 \\ 0.0000 & 0.0000 & -0.3333 & -0.1925 \\ 0.0000 & 0.0000 & -0.3333 & -0.1925 \\ -0.2887 & 0.1667 & -0.1667 & 0.0962 \\ -0.2887 & 0.1667 & -0.1667 & 0.0962 \\ -0.2887 & 0.1667 & -0.1667 & 0.0962 \\ 0.0000 & -0.3333 & 0.0000 & -0.1925 \\ 0.0000 & -0.3333 & 0.0000 & -0.1925 \\ 0.0000 & -0.3333 & 0.0000 & -0.1925 \\ 0.2887 & 0.1667 & 0.1667 & 0.0962 \\ 0.2887 & 0.1667 & 0.1667 & 0.0962 \\ 0.2887 & 0.1667 & 0.1667 & 0.0962 \end{bmatrix}$$

$$\underset{(27\times4)}{\mathbf{U}} = \begin{bmatrix} 0.2887 & -0.1667 & -0.1667 & 0.0962 \\ 0.2887 & -0.1667 & -0.1667 & 0.0962 \\ 0.2887 & -0.1667 & -0.1667 & 0.0962 \\ -0.0000 & 0.3333 & 0.0000 & -0.1925 \\ -0.0000 & 0.3333 & 0.0000 & -0.1925 \\ -0.0000 & 0.3333 & 0.0000 & -0.1925 \\ -0.2887 & -0.1667 & 0.1667 & 0.0962 \\ -0.2887 & -0.1667 & 0.1667 & 0.0962 \\ -0.2887 & -0.1667 & 0.1667 & 0.0962 \\ -0.0000 & 0.0000 & 0.3333 & -0.1925 \\ -0.0000 & 0.0000 & 0.3333 & -0.1925 \\ -0.0000 & 0.0000 & 0.3333 & -0.1925 \\ 0.0000 & -0.0000 & -0.0000 & 0.3849 \\ 0.0000 & -0.0000 & -0.0000 & 0.3849 \\ 0.0000 & -0.0000 & -0.0000 & 0.3849 \\ 0.0000 & 0.0000 & -0.3333 & -0.1925 \\ 0.0000 & 0.0000 & -0.3333 & -0.1925 \\ 0.0000 & 0.0000 & -0.3333 & -0.1925 \\ -0.2887 & 0.1667 & -0.1667 & 0.0962 \\ -0.2887 & 0.1667 & -0.1667 & 0.0962 \\ -0.2887 & 0.1667 & -0.1667 & 0.0962 \\ 0.0000 & -0.3333 & 0.0000 & -0.1925 \\ 0.0000 & -0.3333 & 0.0000 & -0.1925 \\ 0.0000 & -0.3333 & 0.0000 & -0.1925 \\ 0.2887 & 0.1667 & 0.1667 & 0.0962 \\ 0.2887 & 0.1667 & 0.1667 & 0.0962 \\ 0.2887 & 0.1667 & 0.1667 & 0.0962 \end{bmatrix}$$

Contrasts for the test of the A x B x C x D x E x F interaction

$$\underset{(27\times 8)}{\mathbf{C}'} = \begin{bmatrix}
-0.3536 & 0.2041 & 0.2041 & -0.1179 & 0.2041 & -0.1179 & -0.1179 & 0.0680 \\
0.0000 & -0.4082 & -0.0000 & 0.2357 & -0.0000 & 0.2357 & 0.0000 & -0.1361 \\
0.3536 & 0.2041 & -0.2041 & -0.1179 & -0.2041 & -0.1179 & 0.1179 & 0.0680 \\
0.0000 & -0.0000 & -0.4082 & 0.2357 & -0.0000 & 0.0000 & 0.2357 & -0.1361 \\
-0.0000 & 0.0000 & 0.0000 & -0.4714 & 0.0000 & -0.0000 & -0.0000 & 0.2722 \\
-0.0000 & -0.0000 & 0.4082 & 0.2357 & 0.0000 & 0.0000 & -0.2357 & -0.1361 \\
0.3536 & -0.2041 & 0.2041 & -0.1179 & -0.2041 & 0.1179 & -0.1179 & 0.0680 \\
-0.0000 & 0.4082 & -0.0000 & 0.2357 & 0.0000 & -0.2357 & 0.0000 & -0.1361 \\
-0.3536 & -0.2041 & -0.2041 & -0.1179 & 0.2041 & 0.1179 & 0.1179 & 0.0680 \\
0.0000 & -0.0000 & -0.0000 & 0.0000 & -0.4082 & 0.2357 & 0.2357 & -0.1361 \\
-0.0000 & 0.0000 & 0.0000 & -0.0000 & 0.0000 & -0.4714 & -0.0000 & 0.2722 \\
-0.0000 & -0.0000 & 0.0000 & 0.0000 & 0.4082 & 0.2357 & -0.2357 & -0.1361 \\
-0.0000 & 0.0000 & 0.0000 & -0.0000 & 0.0000 & -0.0000 & -0.4714 & 0.2722 \\
0.0000 & -0.0000 & -0.0000 & 0.0000 & -0.0000 & 0.0000 & 0.0000 & -0.5443 \\
0.0000 & 0.0000 & -0.0000 & -0.0000 & -0.0000 & -0.0000 & 0.4714 & 0.2722 \\
-0.0000 & 0.0000 & -0.0000 & 0.0000 & 0.4082 & -0.2357 & 0.2357 & -0.1361 \\
0.0000 & -0.0000 & 0.0000 & -0.0000 & -0.0000 & 0.4714 & -0.0000 & 0.2722 \\
0.0000 & 0.0000 & 0.0000 & 0.0000 & -0.4082 & -0.2357 & -0.2357 & -0.1361 \\
0.3536 & -0.2041 & -0.2041 & 0.1179 & 0.2041 & -0.1179 & -0.1179 & 0.0680 \\
-0.0000 & 0.4082 & 0.0000 & -0.2357 & -0.0000 & 0.2357 & 0.0000 & -0.1361 \\
-0.3536 & -0.2041 & 0.2041 & 0.1179 & -0.2041 & -0.1179 & 0.1179 & 0.0680 \\
-0.0000 & 0.0000 & 0.4082 & -0.2357 & -0.0000 & 0.0000 & 0.2357 & -0.1361 \\
0.0000 & -0.0000 & -0.0000 & 0.4714 & 0.0000 & -0.0000 & -0.0000 & 0.2722 \\
0.0000 & 0.0000 & -0.4082 & -0.2357 & 0.0000 & 0.0000 & -0.2357 & -0.1361 \\
-0.3536 & 0.2041 & -0.2041 & 0.1179 & -0.2041 & 0.1179 & -0.1179 & 0.0680 \\
0.0000 & -0.4082 & 0.0000 & -0.2357 & 0.0000 & -0.2357 & 0.0000 & -0.1361 \\
0.3536 & 0.2041 & 0.2041 & 0.1179 & 0.2041 & 0.1179 & 0.1179 & 0.0680
\end{bmatrix}$$

$$\underset{(27\times 8)}{\mathbf{U}} = \begin{bmatrix} -0.3536 & 0.2041 & 0.2041 & -0.1179 & 0.2041 & -0.1179 & -0.1179 & 0.0680 \\ 0.0000 & -0.4082 & -0.0000 & 0.2357 & -0.0000 & 0.2357 & 0.0000 & -0.1361 \\ 0.3536 & 0.2041 & -0.2041 & -0.1179 & -0.2041 & -0.1179 & 0.1179 & 0.0680 \\ 0.0000 & -0.0000 & -0.4082 & 0.2357 & -0.0000 & 0.0000 & 0.2357 & -0.1361 \\ -0.0000 & 0.0000 & 0.0000 & -0.4714 & 0.0000 & -0.0000 & -0.0000 & 0.2722 \\ -0.0000 & -0.0000 & 0.4082 & 0.2357 & 0.0000 & 0.0000 & -0.2357 & -0.1361 \\ 0.3536 & -0.2041 & 0.2041 & -0.1179 & -0.2041 & 0.1179 & -0.1179 & 0.0680 \\ -0.0000 & 0.4082 & -0.0000 & 0.2357 & 0.0000 & -0.2357 & 0.0000 & -0.1361 \\ -0.3536 & -0.2041 & -0.2041 & -0.1179 & 0.2041 & 0.1179 & 0.1179 & 0.0680 \\ 0.0000 & -0.0000 & -0.0000 & 0.0000 & -0.4082 & 0.2357 & 0.2357 & -0.1361 \\ -0.0000 & 0.0000 & 0.0000 & -0.0000 & 0.0000 & -0.4714 & -0.0000 & 0.2722 \\ -0.0000 & -0.0000 & 0.0000 & 0.0000 & 0.4082 & 0.2357 & -0.2357 & -0.1361 \\ -0.0000 & 0.0000 & 0.0000 & -0.0000 & 0.0000 & -0.0000 & -0.4714 & 0.2722 \\ 0.0000 & -0.0000 & -0.0000 & 0.0000 & -0.0000 & 0.0000 & 0.0000 & -0.5443 \\ 0.0000 & 0.0000 & -0.0000 & -0.0000 & -0.0000 & -0.0000 & 0.4714 & 0.2722 \\ -0.0000 & 0.0000 & -0.0000 & 0.0000 & 0.4082 & -0.2357 & 0.2357 & -0.1361 \\ 0.0000 & -0.0000 & 0.0000 & -0.0000 & -0.0000 & 0.4714 & -0.0000 & 0.2722 \\ 0.0000 & 0.0000 & 0.0000 & 0.0000 & -0.4082 & -0.2357 & -0.2357 & -0.1361 \\ 0.3536 & -0.2041 & -0.2041 & 0.1179 & 0.2041 & -0.1179 & -0.1179 & 0.0680 \\ -0.0000 & 0.4082 & 0.0000 & -0.2357 & -0.0000 & 0.2357 & 0.0000 & -0.1361 \\ -0.3536 & -0.2041 & 0.2041 & 0.1179 & -0.2041 & -0.1179 & 0.1179 & 0.0680 \\ -0.0000 & 0.0000 & 0.4082 & -0.2357 & -0.0000 & 0.0000 & 0.2357 & -0.1361 \\ 0.0000 & -0.0000 & -0.0000 & 0.4714 & 0.0000 & -0.0000 & -0.0000 & 0.2722 \\ 0.0000 & 0.0000 & -0.4082 & -0.2357 & 0.0000 & 0.0000 & -0.2357 & -0.1361 \\ -0.3536 & 0.2041 & -0.2041 & 0.1179 & -0.2041 & 0.1179 & -0.1179 & 0.0680 \\ 0.0000 & -0.4082 & 0.0000 & -0.2357 & 0.0000 & -0.2357 & 0.0000 & -0.1361 \\ 0.3536 & 0.2041 & 0.2041 & 0.1179 & 0.2041 & 0.1179 & 0.1179 & 0.0680 \end{bmatrix}$$

3. Validation Results

A total of 378 power values were computed for this experiment.

3.1. Timing

	Total Time (seconds)	Mean Time (seconds)
Calculation	0.0320000	8.47E-5
Simulation	5717.1560000	1.51E1

3.2. Summary Statistics

Max deviation from SAS	0.00000097
Max deviation from simulation	0.05326274

3.3. Full Validation Results

Power	SAS Power (deviation)	Sim Power (deviation)	Test	Sigma Scale	Beta Scale	Total N	Alpha
0.0609933	0.0609933 (0.0000000)	0.0619000 (0.0009067)	UNIREP	1.0000000	9.0000000	54	0.0500000
0.0632492	0.0632491 (0.0000001)	0.0601000 (0.0031492)	UNIREP	1.0000000	9.0000000	108	0.0500000
0.0657998	0.0657991 (0.0000007)	0.0634000 (0.0023998)	UNIREP	1.0000000	9.0000000	162	0.0500000
0.0684437	0.0684436 (0.0000000)	0.0652000 (0.0032437)	UNIREP	1.0000000	9.0000000	216	0.0500000
0.0711598	0.0711598 (0.0000001)	0.0722000 (0.0010402)	UNIREP	1.0000000	9.0000000	270	0.0500000
0.0739413	0.0739411 (0.0000002)	0.0722000 (0.0017413)	UNIREP	1.0000000	9.0000000	324	0.0500000
0.0683815	0.0683815 (0.0000000)	0.0696000 (0.0012185)	UNIREP	1.0000000	18.0000000	54	0.0500000
0.0794694	0.0794694 (0.0000000)	0.0752000 (0.0042694)	UNIREP	1.0000000	18.0000000	108	0.0500000
0.0916409	0.0916406 (0.0000003)	0.0873000 (0.0043409)	UNIREP	1.0000000	18.0000000	162	0.0500000
0.1047683	0.1047682 (0.0000001)	0.1020000 (0.0027683)	UNIREP	1.0000000	18.0000000	216	0.0500000
0.1188172	0.1188168 (0.0000004)	0.1192000 (0.0003828)	UNIREP	1.0000000	18.0000000	270	0.0500000
0.1337517	0.1337517 (0.0000001)	0.1298000 (0.0039517)	UNIREP	1.0000000	18.0000000	324	0.0500000
0.0817203	0.0817202 (0.0000001)	0.0828000 (0.0010797)	UNIREP	1.0000000	27.0000000	54	0.0500000
0.1109780	0.1109778 (0.0000002)	0.1048000 (0.0061780)	UNIREP	1.0000000	27.0000000	108	0.0500000
0.1447207	0.1447205 (0.0000002)	0.1395000 (0.0052207)	UNIREP	1.0000000	27.0000000	162	0.0500000
0.1825497	0.1825495 (0.0000001)	0.1771000 (0.0054497)	UNIREP	1.0000000	27.0000000	216	0.0500000
0.2238619	0.2238618 (0.0000001)	0.2264000 (0.0025381)	UNIREP	1.0000000	27.0000000	270	0.0500000
0.2679421	0.2679416 (0.0000005)	0.2629000 (0.0050421)	UNIREP	1.0000000	27.0000000	324	0.0500000
0.0657469	0.0657468 (0.0000001)	0.0596000 (0.0061469)	UNIREP	1.0000000	9.0000000	54	0.0500000
0.0706175	0.0706175 (0.0000001)	0.0757000 (0.0050825)	UNIREP	1.0000000	9.0000000	108	0.0500000

0.0759258	0.0759251 (0.0000007)	0.0776000 (0.0016742)	UNIREP	1.0000000	9.0000000	162	0.0500000
0.0815354	0.0815352 (0.0000002)	0.0807000 (0.0008354)	UNIREP	1.0000000	9.0000000	216	0.0500000
0.0874375	0.0874365 (0.0000009)	0.0861000 (0.0013375)	UNIREP	1.0000000	9.0000000	270	0.0500000
0.0936295	0.0936293 (0.0000002)	0.0962000 (0.0025705)	UNIREP	1.0000000	9.0000000	324	0.0500000
0.0803788	0.0803786 (0.0000002)	0.0744000 (0.0059788)	UNIREP	1.0000000	18.0000000	54	0.0500000
0.1057150	0.1057149 (0.0000002)	0.1080000 (0.0022850)	UNIREP	1.0000000	18.0000000	108	0.0500000
0.1356552	0.1356546 (0.0000006)	0.1373000 (0.0016448)	UNIREP	1.0000000	18.0000000	162	0.0500000
0.1703186	0.1703185 (0.0000001)	0.1679000 (0.0024186)	UNIREP	1.0000000	18.0000000	216	0.0500000
0.2095237	0.2095234 (0.0000003)	0.2041000 (0.0054237)	UNIREP	1.0000000	18.0000000	270	0.0500000
0.2528615	0.2528611 (0.0000003)	0.2523000 (0.0005615)	UNIREP	1.0000000	18.0000000	324	0.0500000
0.1093445	0.1093439 (0.0000006)	0.1048000 (0.0045445)	UNIREP	1.0000000	27.0000000	54	0.0500000
0.1859364	0.1859357 (0.0000007)	0.1870000 (0.0010636)	UNIREP	1.0000000	27.0000000	108	0.0500000
0.2837108	0.2837105 (0.0000003)	0.2791000 (0.0046108)	UNIREP	1.0000000	27.0000000	162	0.0500000
0.3964517	0.3964513 (0.0000004)	0.3974000 (0.0009483)	UNIREP	1.0000000	27.0000000	216	0.0500000
0.5142980	0.5142976 (0.0000004)	0.5149000 (0.0006020)	UNIREP	1.0000000	27.0000000	270	0.0500000
0.6270356	0.6270353 (0.0000003)	0.6235000 (0.0035356)	UNIREP	1.0000000	27.0000000	324	0.0500000
0.0711775	0.0711772 (0.0000003)	0.0713000 (0.0001225)	UNIREP	1.0000000	9.0000000	54	0.0500000
0.0826074	0.0826071 (0.0000003)	0.0923000 (0.0096926)	UNIREP	1.0000000	9.0000000	108	0.0500000
0.0952669	0.0952659 (0.0000010)	0.0898000 (0.0054669)	UNIREP	1.0000000	9.0000000	162	0.0500000
0.1092348	0.1092346 (0.0000002)	0.1083000 (0.0009348)	UNIREP	1.0000000	9.0000000	216	0.0500000
0.1245572	0.1245568 (0.0000004)	0.1213000 (0.0032572)	UNIREP	1.0000000	9.0000000	270	0.0500000
0.1412597	0.1412591 (0.0000006)	0.1416000 (0.0003403)	UNIREP	1.0000000	9.0000000	324	0.0500000

0.1030748	0.1030745 (0.0000003)	0.1037000 (0.0006252)	UNIREP	1.0000000	18.0000000	54	0.0500000
0.1721905	0.1721896 (0.0000009)	0.1809000 (0.0087095)	UNIREP	1.0000000	18.0000000	108	0.0500000
0.2619072	0.2619065 (0.0000007)	0.2551000 (0.0068072)	UNIREP	1.0000000	18.0000000	162	0.0500000
0.3689071	0.3689067 (0.0000004)	0.3804000 (0.0114929)	UNIREP	1.0000000	18.0000000	216	0.0500000
0.4853431	0.4853425 (0.0000005)	0.4933000 (0.0079569)	UNIREP	1.0000000	18.0000000	270	0.0500000
0.6012804	0.6012798 (0.0000006)	0.6017000 (0.0004196)	UNIREP	1.0000000	18.0000000	324	0.0500000
0.1754020	0.1754017 (0.0000003)	0.1729000 (0.0025020)	UNIREP	1.0000000	27.0000000	54	0.0500000
0.4081656	0.4081652 (0.0000004)	0.4145000 (0.0063344)	UNIREP	1.0000000	27.0000000	108	0.0500000
0.6664681	0.6664678 (0.0000003)	0.6709000 (0.0044319)	UNIREP	1.0000000	27.0000000	162	0.0500000
0.8571826	0.8571823 (0.0000003)	0.8546000 (0.0025826)	UNIREP	1.0000000	27.0000000	216	0.0500000
0.9537892	0.9537887 (0.0000005)	0.9558000 (0.0020108)	UNIREP	1.0000000	27.0000000	270	0.0500000
0.9885992	0.9885989 (0.0000004)	0.9895000 (0.0009008)	UNIREP	1.0000000	27.0000000	324	0.0500000
0.0219174	0.0219174 (0.0000000)	0.0228000 (0.0008826)	UNIREP-BOX	1.0000000	9.0000000	54	0.0500000
0.0241451	0.0241448 (0.0000002)	0.0223000 (0.0018451)	UNIREP-BOX	1.0000000	9.0000000	108	0.0500000
0.0255688	0.0255688 (0.0000000)	0.0260000 (0.0004312)	UNIREP-BOX	1.0000000	9.0000000	162	0.0500000
0.0269002	0.0269001 (0.0000001)	0.0256000 (0.0013002)	UNIREP-BOX	1.0000000	9.0000000	216	0.0500000
0.0282233	0.0282231 (0.0000002)	0.0273000 (0.0009233)	UNIREP-BOX	1.0000000	9.0000000	270	0.0500000
0.0295622	0.0295618 (0.0000005)	0.0300000 (0.0004378)	UNIREP-BOX	1.0000000	9.0000000	324	0.0500000
0.0250534	0.0250533 (0.0000001)	0.0249000 (0.0001534)	UNIREP-BOX	1.0000000	18.0000000	54	0.0500000
0.0315103	0.0315103 (0.0000001)	0.0301000 (0.0014103)	UNIREP-BOX	1.0000000	18.0000000	108	0.0500000
0.0376221	0.0376214 (0.0000008)	0.0377000 (0.0000779)	UNIREP-BOX	1.0000000	18.0000000	162	0.0500000
0.0442208	0.0442206 (0.0000002)	0.0427000 (0.0015208)	UNIREP-BOX	1.0000000	18.0000000	216	0.0500000

0.0514311	0.0514311 (0.0000001)	0.0520000 (0.0005689)	UNIREP-BOX	1.0000000	18.0000000	270	0.0500000
0.0593009	0.0593007 (0.0000002)	0.0586000 (0.0007009)	UNIREP-BOX	1.0000000	18.0000000	324	0.0500000
0.0308406	0.0308404 (0.0000002)	0.0309000 (0.0000594)	UNIREP-BOX	1.0000000	27.0000000	54	0.0500000
0.0465940	0.0465934 (0.0000006)	0.0446000 (0.0019940)	UNIREP-BOX	1.0000000	27.0000000	108	0.0500000
0.0645984	0.0645977 (0.0000007)	0.0630000 (0.0015984)	UNIREP-BOX	1.0000000	27.0000000	162	0.0500000
0.0859792	0.0859786 (0.0000006)	0.0843000 (0.0016792)	UNIREP-BOX	1.0000000	27.0000000	216	0.0500000
0.1108698	0.1108694 (0.0000004)	0.1135000 (0.0026302)	UNIREP-BOX	1.0000000	27.0000000	270	0.0500000
0.1391860	0.1391858 (0.0000002)	0.1364000 (0.0027860)	UNIREP-BOX	1.0000000	27.0000000	324	0.0500000
0.0023498	0.0023497 (0.0000001)	0.0018000 (0.0005498)	UNIREP-BOX	1.0000000	9.0000000	54	0.0500000
0.0031327	0.0031325 (0.0000001)	0.0047000 (0.0015673)	UNIREP-BOX	1.0000000	9.0000000	108	0.0500000
0.0036167	0.0036166 (0.0000001)	0.0045000 (0.0008833)	UNIREP-BOX	1.0000000	9.0000000	162	0.0500000
0.0040797	0.0040792 (0.0000005)	0.0044000 (0.0003203)	UNIREP-BOX	1.0000000	9.0000000	216	0.0500000
0.0045597	0.0045596 (0.0000002)	0.0048000 (0.0002403)	UNIREP-BOX	1.0000000	9.0000000	270	0.0500000
0.0050720	0.0050713 (0.0000007)	0.0062000 (0.0011280)	UNIREP-BOX	1.0000000	9.0000000	324	0.0500000
0.0031468	0.0031462 (0.0000006)	0.0025000 (0.0006468)	UNIREP-BOX	1.0000000	18.0000000	54	0.0500000
0.0056616	0.0056609 (0.0000007)	0.0068000 (0.0011384)	UNIREP-BOX	1.0000000	18.0000000	108	0.0500000
0.0085820	0.0085816 (0.0000004)	0.0091000 (0.0005180)	UNIREP-BOX	1.0000000	18.0000000	162	0.0500000
0.0124614	0.0124613 (0.0000002)	0.0129000 (0.0004386)	UNIREP-BOX	1.0000000	18.0000000	216	0.0500000
0.0176109	0.0176105 (0.0000004)	0.0170000 (0.0006109)	UNIREP-BOX	1.0000000	18.0000000	270	0.0500000
0.0243373	0.0243365 (0.0000009)	0.0264000 (0.0020627)	UNIREP-BOX	1.0000000	18.0000000	324	0.0500000
0.0049641	0.0049638 (0.0000002)	0.0042000 (0.0007641)	UNIREP-BOX	1.0000000	27.0000000	54	0.0500000
0.0136130	0.0136122 (0.0000008)	0.0153000 (0.0016870)	UNIREP-BOX	1.0000000	27.0000000	108	0.0500000

0.0289040	0.0289031 (0.0000009)	0.0284000 (0.0005040)	UNIREP-BOX	1.0000000	27.0000000	162	0.0500000
0.0547057	0.0547051 (0.0000006)	0.0551000 (0.0003943)	UNIREP-BOX	1.0000000	27.0000000	216	0.0500000
0.0943389	0.0943385 (0.0000003)	0.0924000 (0.0019389)	UNIREP-BOX	1.0000000	27.0000000	270	0.0500000
0.1499070	0.1499065 (0.0000005)	0.1537000 (0.0037930)	UNIREP-BOX	1.0000000	27.0000000	324	0.0500000
0.0000216	0.0000211 (0.0000005)	0.0000000 (0.0000216)	UNIREP-BOX	1.0000000	9.0000000	54	0.0500000
0.0000474	0.0000469 (0.0000005)	0.0002000 (0.0001526)	UNIREP-BOX	1.0000000	9.0000000	108	0.0500000
0.0000701	0.0000699 (0.0000003)	0.0001000 (0.0000299)	UNIREP-BOX	1.0000000	9.0000000	162	0.0500000
0.0000979	0.0000972 (0.0000007)	0.0001000 (0.0000021)	UNIREP-BOX	1.0000000	9.0000000	216	0.0500000
0.0001319	0.0001316 (0.0000002)	0.0001000 (0.0000319)	UNIREP-BOX	1.0000000	9.0000000	270	0.0500000
0.0001759	0.0001755 (0.0000004)	0.0004000 (0.0002241)	UNIREP-BOX	1.0000000	9.0000000	324	0.0500000
0.0000454	0.0000447 (0.0000007)	0.0000000 (0.0000454)	UNIREP-BOX	1.0000000	18.0000000	54	0.0500000
0.0002238	0.0002229 (0.0000009)	0.0002000 (0.0000238)	UNIREP-BOX	1.0000000	18.0000000	108	0.0500000
0.0006756	0.0006750 (0.0000006)	0.0009000 (0.0002244)	UNIREP-BOX	1.0000000	18.0000000	162	0.0500000
0.0017681	0.0017678 (0.0000003)	0.0011000 (0.0006681)	UNIREP-BOX	1.0000000	18.0000000	216	0.0500000
0.0041924	0.0041920 (0.0000005)	0.0052000 (0.0010076)	UNIREP-BOX	1.0000000	18.0000000	270	0.0500000
0.0091297	0.0091291 (0.0000006)	0.0094000 (0.0002703)	UNIREP-BOX	1.0000000	18.0000000	324	0.0500000
0.0001421	0.0001418 (0.0000003)	0.0001000 (0.0000421)	UNIREP-BOX	1.0000000	27.0000000	54	0.0500000
0.0020521	0.0020517 (0.0000004)	0.0029000 (0.0008479)	UNIREP-BOX	1.0000000	27.0000000	108	0.0500000
0.0128668	0.0128662 (0.0000007)	0.0126000 (0.0002668)	UNIREP-BOX	1.0000000	27.0000000	162	0.0500000
0.0525258	0.0525253 (0.0000005)	0.0500000 (0.0025258)	UNIREP-BOX	1.0000000	27.0000000	216	0.0500000
0.1510816	0.1510811 (0.0000005)	0.1491000 (0.0019816)	UNIREP-BOX	1.0000000	27.0000000	270	0.0500000
0.3226031	0.3226025 (0.0000006)	0.3255000 (0.0028969)	UNIREP-BOX	1.0000000	27.0000000	324	0.0500000

0.0484179	0.0484178 (0.0000000)	0.0513000 (0.0028821)	UNIREP-GG	1.0000000	9.0000000	54	0.0500000
0.0530910	0.0530909 (0.0000001)	0.0524000 (0.0006910)	UNIREP-GG	1.0000000	9.0000000	108	0.0500000
0.0559022	0.0559014 (0.0000007)	0.0555000 (0.0004022)	UNIREP-GG	1.0000000	9.0000000	162	0.0500000
0.0584868	0.0584868 (0.0000000)	0.0580000 (0.0004868)	UNIREP-GG	1.0000000	9.0000000	216	0.0500000
0.0610338	0.0610337 (0.0000001)	0.0624000 (0.0013662)	UNIREP-GG	1.0000000	9.0000000	270	0.0500000
0.0635940	0.0635937 (0.0000003)	0.0631000 (0.0004940)	UNIREP-GG	1.0000000	9.0000000	324	0.0500000
0.0545428	0.0545427 (0.0000000)	0.0568000 (0.0022572)	UNIREP-GG	1.0000000	18.0000000	54	0.0500000
0.0672138	0.0672138 (0.0000000)	0.0652000 (0.0020138)	UNIREP-GG	1.0000000	18.0000000	108	0.0500000
0.0786755	0.0786751 (0.0000004)	0.0762000 (0.0024755)	UNIREP-GG	1.0000000	18.0000000	162	0.0500000
0.0907260	0.0907259 (0.0000001)	0.0889000 (0.0018260)	UNIREP-GG	1.0000000	18.0000000	216	0.0500000
0.1035628	0.1035623 (0.0000005)	0.1050000 (0.0014372)	UNIREP-GG	1.0000000	18.0000000	270	0.0500000
0.1172225	0.1172224 (0.0000001)	0.1146000 (0.0026225)	UNIREP-GG	1.0000000	18.0000000	324	0.0500000
0.0656667	0.0656667 (0.0000001)	0.0682000 (0.0025333)	UNIREP-GG	1.0000000	27.0000000	54	0.0500000
0.0949521	0.0949519 (0.0000003)	0.0908000 (0.0041521)	UNIREP-GG	1.0000000	27.0000000	108	0.0500000
0.1262392	0.1262390 (0.0000003)	0.1233000 (0.0029392)	UNIREP-GG	1.0000000	27.0000000	162	0.0500000
0.1613099	0.1613097 (0.0000002)	0.1573000 (0.0040099)	UNIREP-GG	1.0000000	27.0000000	216	0.0500000
0.1999216	0.1999215 (0.0000001)	0.1986000 (0.0013216)	UNIREP-GG	1.0000000	27.0000000	270	0.0500000
0.2415316	0.2415310 (0.0000006)	0.2359000 (0.0056316)	UNIREP-GG	1.0000000	27.0000000	324	0.0500000
0.0436937	0.0436937 (0.0000001)	0.0407000 (0.0029937)	UNIREP-GG	1.0000000	9.0000000	54	0.0500000
0.0543865	0.0543864 (0.0000001)	0.0597000 (0.0053135)	UNIREP-GG	1.0000000	9.0000000	108	0.0500000
0.0603501	0.0603493 (0.0000008)	0.0616000 (0.0012499)	UNIREP-GG	1.0000000	9.0000000	162	0.0500000
0.0657913	0.0657911 (0.0000002)	0.0654000 (0.0003913)	UNIREP-GG	1.0000000	9.0000000	216	0.0500000

0.0712292	0.0712292 (0.0000001)	0.0710000 (0.0002292)	UNIREP-GG	1.0000000	9.0000000	270	0.0500000
0.0768125	0.0768123 (0.0000002)	0.0812000 (0.0043875)	UNIREP-GG	1.0000000	9.0000000	324	0.0500000
0.0542114	0.0542111 (0.0000003)	0.0519000 (0.0023114)	UNIREP-GG	1.0000000	18.0000000	54	0.0500000
0.0831358	0.0831356 (0.0000002)	0.0862000 (0.0030642)	UNIREP-GG	1.0000000	18.0000000	108	0.0500000
0.1109245	0.1109237 (0.0000008)	0.1136000 (0.0026755)	UNIREP-GG	1.0000000	18.0000000	162	0.0500000
0.1424588	0.1424586 (0.0000002)	0.1441000 (0.0016412)	UNIREP-GG	1.0000000	18.0000000	216	0.0500000
0.1782758	0.1782755 (0.0000003)	0.1757000 (0.0025758)	UNIREP-GG	1.0000000	18.0000000	270	0.0500000
0.2182884	0.2182879 (0.0000005)	0.2196000 (0.0013116)	UNIREP-GG	1.0000000	18.0000000	324	0.0500000
0.0755507	0.0755499 (0.0000009)	0.0736000 (0.0019507)	UNIREP-GG	1.0000000	27.0000000	54	0.0500000
0.1513042	0.1513041 (0.0000001)	0.1522000 (0.0008958)	UNIREP-GG	1.0000000	27.0000000	108	0.0500000
0.2428398	0.2428394 (0.0000004)	0.2360000 (0.0068398)	UNIREP-GG	1.0000000	27.0000000	162	0.0500000
0.3508295	0.3508289 (0.0000007)	0.3543000 (0.0034705)	UNIREP-GG	1.0000000	27.0000000	216	0.0500000
0.4671896	0.4671890 (0.0000007)	0.4668000 (0.0003896)	UNIREP-GG	1.0000000	27.0000000	270	0.0500000
0.5820525	0.5820520 (0.0000005)	0.5819000 (0.0001525)	UNIREP-GG	1.0000000	27.0000000	324	0.0500000
0.0372222	0.0372218 (0.0000004)	0.0407000 (0.0034778)	UNIREP-GG	1.0000000	9.0000000	54	0.0500000
0.0585887	0.0585884 (0.0000003)	0.0652000 (0.0066113)	UNIREP-GG	1.0000000	9.0000000	108	0.0500000
0.0721803	0.0721802 (0.0000001)	0.0691000 (0.0030803)	UNIREP-GG	1.0000000	9.0000000	162	0.0500000
0.0854509	0.0854506 (0.0000003)	0.0844000 (0.0010509)	UNIREP-GG	1.0000000	9.0000000	216	0.0500000
0.0994601	0.0994597 (0.0000005)	0.0961000 (0.0033601)	UNIREP-GG	1.0000000	9.0000000	270	0.0500000
0.1145413	0.1145407 (0.0000007)	0.1164000 (0.0018587)	UNIREP-GG	1.0000000	9.0000000	324	0.0500000
0.0565658	0.0565654 (0.0000004)	0.0595000 (0.0029342)	UNIREP-GG	1.0000000	18.0000000	54	0.0500000
0.1296831	0.1296829 (0.0000002)	0.1395000 (0.0098169)	UNIREP-GG	1.0000000	18.0000000	108	0.0500000

0.2141173	0.2141171 (0.0000002)	0.2070000 (0.0071173)	UNIREP-GG	1.0000000	18.0000000	162	0.0500000
0.3162937	0.3162931 (0.0000005)	0.3257000 (0.0094063)	UNIREP-GG	1.0000000	18.0000000	216	0.0500000
0.4309016	0.4309007 (0.0000008)	0.4403000 (0.0093984)	UNIREP-GG	1.0000000	18.0000000	270	0.0500000
0.5489145	0.5489142 (0.0000003)	0.5511000 (0.0021855)	UNIREP-GG	1.0000000	18.0000000	324	0.0500000
0.1041296	0.1041292 (0.0000004)	0.1084000 (0.0042704)	UNIREP-GG	1.0000000	27.0000000	54	0.0500000
0.3374002	0.3373996 (0.0000006)	0.3460000 (0.0085998)	UNIREP-GG	1.0000000	27.0000000	108	0.0500000
0.6064697	0.6064692 (0.0000006)	0.6086000 (0.0021303)	UNIREP-GG	1.0000000	27.0000000	162	0.0500000
0.8209135	0.8209130 (0.0000005)	0.8172000 (0.0037135)	UNIREP-GG	1.0000000	27.0000000	216	0.0500000
0.9381900	0.9381895 (0.0000005)	0.9406000 (0.0024100)	UNIREP-GG	1.0000000	27.0000000	270	0.0500000
0.9837136	0.9837132 (0.0000004)	0.9851000 (0.0013864)	UNIREP-GG	1.0000000	27.0000000	324	0.0500000
0.0520717	0.0520717 (0.0000000)	0.0513000 (0.0007717)	UNIREP-HF	1.0000000	9.0000000	54	0.0500000
0.0543756	0.0543755 (0.0000001)	0.0524000 (0.0019756)	UNIREP-HF	1.0000000	9.0000000	108	0.0500000
0.0567024	0.0567017 (0.0000007)	0.0555000 (0.0012024)	UNIREP-HF	1.0000000	9.0000000	162	0.0500000
0.0590787	0.0590787 (0.0000000)	0.0580000 (0.0010787)	UNIREP-HF	1.0000000	9.0000000	216	0.0500000
0.0615099	0.0615098 (0.0000001)	0.0624000 (0.0008901)	UNIREP-HF	1.0000000	9.0000000	270	0.0500000
0.0639964	0.0639962 (0.0000003)	0.0631000 (0.0008964)	UNIREP-HF	1.0000000	9.0000000	324	0.0500000
0.0585723	0.0585723 (0.0000000)	0.0568000 (0.0017723)	UNIREP-HF	1.0000000	18.0000000	54	0.0500000
0.0687703	0.0687702 (0.0000000)	0.0652000 (0.0035703)	UNIREP-HF	1.0000000	18.0000000	108	0.0500000
0.0797304	0.0797301 (0.0000004)	0.0762000 (0.0035304)	UNIREP-HF	1.0000000	18.0000000	162	0.0500000
0.0915677	0.0915676 (0.0000001)	0.0889000 (0.0026677)	UNIREP-HF	1.0000000	18.0000000	216	0.0500000
0.1042874	0.1042869 (0.0000005)	0.1050000 (0.0007126)	UNIREP-HF	1.0000000	18.0000000	270	0.0500000
0.1178732	0.1178732 (0.0000001)	0.1146000 (0.0032732)	UNIREP-HF	1.0000000	18.0000000	324	0.0500000

0.0703573	0.0703572 (0.0000001)	0.0682000 (0.0021573)	UNIREP-HF	1.0000000	27.0000000	54	0.0500000
0.0970012	0.0970010 (0.0000002)	0.0908000 (0.0062012)	UNIREP-HF	1.0000000	27.0000000	108	0.0500000
0.1277580	0.1277577 (0.0000003)	0.1233000 (0.0044580)	UNIREP-HF	1.0000000	27.0000000	162	0.0500000
0.1625997	0.1625995 (0.0000002)	0.1573000 (0.0052997)	UNIREP-HF	1.0000000	27.0000000	216	0.0500000
0.2010770	0.2010769 (0.0000001)	0.1986000 (0.0024770)	UNIREP-HF	1.0000000	27.0000000	270	0.0500000
0.2425910	0.2425904 (0.0000006)	0.2359000 (0.0066910)	UNIREP-HF	1.0000000	27.0000000	324	0.0500000
0.0537554	0.0537553 (0.0000001)	0.0407000 (0.0130554)	UNIREP-HF	1.0000000	9.0000000	54	0.0500000
0.0582027	0.0582026 (0.0000001)	0.0597000 (0.0014973)	UNIREP-HF	1.0000000	9.0000000	108	0.0500000
0.0628185	0.0628177 (0.0000008)	0.0616000 (0.0012185)	UNIREP-HF	1.0000000	9.0000000	162	0.0500000
0.0676746	0.0676743 (0.0000002)	0.0654000 (0.0022746)	UNIREP-HF	1.0000000	9.0000000	216	0.0500000
0.0727871	0.0727871 (0.0000001)	0.0710000 (0.0017871)	UNIREP-HF	1.0000000	9.0000000	270	0.0500000
0.0781645	0.0781642 (0.0000002)	0.0812000 (0.0030355)	UNIREP-HF	1.0000000	9.0000000	324	0.0500000
0.0662102	0.0662099 (0.0000003)	0.0519000 (0.0143102)	UNIREP-HF	1.0000000	18.0000000	54	0.0500000
0.0884994	0.0884992 (0.0000002)	0.0862000 (0.0022994)	UNIREP-HF	1.0000000	18.0000000	108	0.0500000
0.1149051	0.1149044 (0.0000008)	0.1136000 (0.0013051)	UNIREP-HF	1.0000000	18.0000000	162	0.0500000
0.1458614	0.1458612 (0.0000002)	0.1441000 (0.0017614)	UNIREP-HF	1.0000000	18.0000000	216	0.0500000
0.1813591	0.1813588 (0.0000003)	0.1757000 (0.0056591)	UNIREP-HF	1.0000000	18.0000000	270	0.0500000
0.2211568	0.2211563 (0.0000005)	0.2196000 (0.0015568)	UNIREP-HF	1.0000000	18.0000000	324	0.0500000
0.0911765	0.0911757 (0.0000008)	0.0736000 (0.0175765)	UNIREP-HF	1.0000000	27.0000000	54	0.0500000
0.1596749	0.1596740 (0.0000009)	0.1522000 (0.0074749)	UNIREP-HF	1.0000000	27.0000000	108	0.0500000
0.2495931	0.2495927 (0.0000004)	0.2360000 (0.0135931)	UNIREP-HF	1.0000000	27.0000000	162	0.0500000
0.3566000	0.3565994 (0.0000006)	0.3543000 (0.0023000)	UNIREP-HF	1.0000000	27.0000000	216	0.0500000

0.4720448	0.4720441 (0.0000006)	0.4668000 (0.0052448)	UNIREP-HF	1.0000000	27.0000000	270	0.0500000
0.5859826	0.5859821 (0.0000005)	0.5819000 (0.0040826)	UNIREP-HF	1.0000000	27.0000000	324	0.0500000
0.0574124	0.0574121 (0.0000004)	0.0407000 (0.0167124)	UNIREP-HF	1.0000000	9.0000000	54	0.0500000
0.0673772	0.0673769 (0.0000003)	0.0652000 (0.0021772)	UNIREP-HF	1.0000000	9.0000000	108	0.0500000
0.0782865	0.0782863 (0.0000001)	0.0691000 (0.0091865)	UNIREP-HF	1.0000000	9.0000000	162	0.0500000
0.0903846	0.0903843 (0.0000003)	0.0844000 (0.0059846)	UNIREP-HF	1.0000000	9.0000000	216	0.0500000
0.1037485	0.1037481 (0.0000005)	0.0961000 (0.0076485)	UNIREP-HF	1.0000000	9.0000000	270	0.0500000
0.1184273	0.1184267 (0.0000006)	0.1164000 (0.0020273)	UNIREP-HF	1.0000000	9.0000000	324	0.0500000
0.0845424	0.0845420 (0.0000003)	0.0595000 (0.0250424)	UNIREP-HF	1.0000000	18.0000000	54	0.0500000
0.1456124	0.1456122 (0.0000002)	0.1395000 (0.0061124)	UNIREP-HF	1.0000000	18.0000000	108	0.0500000
0.2272244	0.2272235 (0.0000009)	0.2070000 (0.0202244)	UNIREP-HF	1.0000000	18.0000000	162	0.0500000
0.3277511	0.3277506 (0.0000005)	0.3257000 (0.0020511)	UNIREP-HF	1.0000000	18.0000000	216	0.0500000
0.4407885	0.4407878 (0.0000007)	0.4403000 (0.0004885)	UNIREP-HF	1.0000000	18.0000000	270	0.0500000
0.5571097	0.5571089 (0.0000008)	0.5511000 (0.0060097)	UNIREP-HF	1.0000000	18.0000000	324	0.0500000
0.1478286	0.1478283 (0.0000003)	0.1084000 (0.0394286)	UNIREP-HF	1.0000000	27.0000000	54	0.0500000
0.3649934	0.3649929 (0.0000005)	0.3460000 (0.0189934)	UNIREP-HF	1.0000000	27.0000000	108	0.0500000
0.6239404	0.6239400 (0.0000005)	0.6086000 (0.0153404)	UNIREP-HF	1.0000000	27.0000000	162	0.0500000
0.8294645	0.8294640 (0.0000005)	0.8172000 (0.0122645)	UNIREP-HF	1.0000000	27.0000000	216	0.0500000
0.9413146	0.9413141 (0.0000004)	0.9406000 (0.0007146)	UNIREP-HF	1.0000000	27.0000000	270	0.0500000
0.9845718	0.9845714 (0.0000004)	0.9851000 (0.0005282)	UNIREP-HF	1.0000000	27.0000000	324	0.0500000
0.0544158	0.0544157 (0.0000001)	0.0554000 (0.0009842)	WL	1.0000000	9.0000000	54	0.0500000
0.0595009	0.0595009 (0.0000000)	0.0566000 (0.0029009)	WL	1.0000000	9.0000000	108	0.0500000

0.0646117	0.0646116 (0.0000001)	0.0652000 (0.0005883)	WL	1.0000000	9.0000000	162	0.0500000
0.0698324	0.0698320 (0.0000004)	0.0674000 (0.0024324)	WL	1.0000000	9.0000000	216	0.0500000
0.0751687	0.0751687 (0.0000000)	0.0747000 (0.0004687)	WL	1.0000000	9.0000000	270	0.0500000
0.0806212	0.0806212 (0.0000001)	0.0808000 (0.0001788)	WL	1.0000000	9.0000000	324	0.0500000
0.0682870	0.0682865 (0.0000005)	0.0689000 (0.0006130)	WL	1.0000000	18.0000000	54	0.0500000
0.0907465	0.0907461 (0.0000004)	0.0855000 (0.0052465)	WL	1.0000000	18.0000000	108	0.0500000
0.1145051	0.1145050 (0.0000002)	0.1169000 (0.0023949)	WL	1.0000000	18.0000000	162	0.0500000
0.1397014	0.1397004 (0.0000009)	0.1357000 (0.0040014)	WL	1.0000000	18.0000000	216	0.0500000
0.1661491	0.1661489 (0.0000002)	0.1665000 (0.0003509)	WL	1.0000000	18.0000000	270	0.0500000
0.1936408	0.1936401 (0.0000007)	0.1880000 (0.0056408)	WL	1.0000000	18.0000000	324	0.0500000
0.0933131	0.0933131 (0.0000000)	0.0918000 (0.0015131)	WL	1.0000000	27.0000000	54	0.0500000
0.1503826	0.1503824 (0.0000001)	0.1430000 (0.0073826)	WL	1.0000000	27.0000000	108	0.0500000
0.2123852	0.2123851 (0.0000001)	0.2106000 (0.0017852)	WL	1.0000000	27.0000000	162	0.0500000
0.2777600	0.2777592 (0.0000009)	0.2758000 (0.0019600)	WL	1.0000000	27.0000000	216	0.0500000
0.3444321	0.3444318 (0.0000003)	0.3529000 (0.0084679)	WL	1.0000000	27.0000000	270	0.0500000
0.4105840	0.4105839 (0.0000001)	0.4049000 (0.0056840)	WL	1.0000000	27.0000000	324	0.0500000
0.0590513	0.0590512 (0.0000001)	0.0583000 (0.0007513)	WL	1.0000000	9.0000000	54	0.0500000
0.0712513	0.0712511 (0.0000003)	0.0759000 (0.0046487)	WL	1.0000000	9.0000000	108	0.0500000
0.0841583	0.0841581 (0.0000002)	0.0805000 (0.0036583)	WL	1.0000000	9.0000000	162	0.0500000
0.0980640	0.0980639 (0.0000001)	0.0978000 (0.0002640)	WL	1.0000000	9.0000000	216	0.0500000
0.1129715	0.1129708 (0.0000008)	0.1115000 (0.0014715)	WL	1.0000000	9.0000000	270	0.0500000
0.1288459	0.1288456 (0.0000003)	0.1292000 (0.0003541)	WL	1.0000000	9.0000000	324	0.0500000

0.0905058	0.0905056 (0.0000002)	0.0876000 (0.0029058)	WL	1.0000000	18.0000000	54	0.0500000
0.1561959	0.1561954 (0.0000004)	0.1579000 (0.0017041)	WL	1.0000000	18.0000000	108	0.0500000
0.2331164	0.2331162 (0.0000003)	0.2280000 (0.0051164)	WL	1.0000000	18.0000000	162	0.0500000
0.3182214	0.3182207 (0.0000007)	0.3212000 (0.0029786)	WL	1.0000000	18.0000000	216	0.0500000
0.4068653	0.4068652 (0.0000002)	0.4014000 (0.0054653)	WL	1.0000000	18.0000000	270	0.0500000
0.4946297	0.4946295 (0.0000002)	0.4935000 (0.0011297)	WL	1.0000000	18.0000000	324	0.0500000
0.1554930	0.1554927 (0.0000002)	0.1479000 (0.0075930)	WL	1.0000000	27.0000000	54	0.0500000
0.3442301	0.3442297 (0.0000004)	0.3357000 (0.0085301)	WL	1.0000000	27.0000000	108	0.0500000
0.5396273	0.5396265 (0.0000008)	0.5359000 (0.0037273)	WL	1.0000000	27.0000000	162	0.0500000
0.7058684	0.7058678 (0.0000006)	0.7051000 (0.0007684)	WL	1.0000000	27.0000000	216	0.0500000
0.8270960	0.8270957 (0.0000003)	0.8306000 (0.0035040)	WL	1.0000000	27.0000000	270	0.0500000
0.9055161	0.9055157 (0.0000004)	0.9095000 (0.0039839)	WL	1.0000000	27.0000000	324	0.0500000
0.0667269	0.0667261 (0.0000008)	0.0682000 (0.0014731)	WL	1.0000000	9.0000000	54	0.0500000
0.0957945	0.0957939 (0.0000006)	0.0975000 (0.0017055)	WL	1.0000000	9.0000000	108	0.0500000
0.1294925	0.1294923 (0.0000002)	0.1250000 (0.0044925)	WL	1.0000000	9.0000000	162	0.0500000
0.1686055	0.1686053 (0.0000002)	0.1693000 (0.0006945)	WL	1.0000000	9.0000000	216	0.0500000
0.2127815	0.2127808 (0.0000007)	0.2113000 (0.0014815)	WL	1.0000000	9.0000000	270	0.0500000
0.2613273	0.2613269 (0.0000004)	0.2561000 (0.0052273)	WL	1.0000000	9.0000000	324	0.0500000
0.1316898	0.1316896 (0.0000002)	0.1230000 (0.0086898)	WL	1.0000000	18.0000000	54	0.0500000
0.3209013	0.3209010 (0.0000003)	0.3093000 (0.0116013)	WL	1.0000000	18.0000000	108	0.0500000
0.5355984	0.5355977 (0.0000007)	0.5237000 (0.0118984)	WL	1.0000000	18.0000000	162	0.0500000
0.7237019	0.7237013 (0.0000005)	0.7178000 (0.0059019)	WL	1.0000000	18.0000000	216	0.0500000

0.8559164	0.8559158 (0.0000006)	0.8596000 (0.0036836)	WL	1.0000000	18.0000000	270	0.0500000
0.9334315	0.9334311 (0.0000004)	0.9406000 (0.0071685)	WL	1.0000000	18.0000000	324	0.0500000
0.2741590	0.2741585 (0.0000005)	0.2340000 (0.0401590)	WL	1.0000000	27.0000000	54	0.0500000
0.7239273	0.7239270 (0.0000003)	0.7067000 (0.0172273)	WL	1.0000000	27.0000000	108	0.0500000
0.9405326	0.9405320 (0.0000006)	0.9439000 (0.0033674)	WL	1.0000000	27.0000000	162	0.0500000
0.9920730	0.9920726 (0.0000004)	0.9946000 (0.0025270)	WL	1.0000000	27.0000000	216	0.0500000
0.9992857	0.9992856 (0.0000002)	0.9997000 (0.0004143)	WL	1.0000000	27.0000000	270	0.0500000
0.9999535	0.9999534 (0.0000001)	1.0000000 (0.0000465)	WL	1.0000000	27.0000000	324	0.0500000
0.0545635	0.0545634 (0.0000001)	0.0569000 (0.0023365)	PBT	1.0000000	9.0000000	54	0.0500000
0.0595972	0.0595972 (0.0000000)	0.0567000 (0.0028972)	PBT	1.0000000	9.0000000	108	0.0500000
0.0646988	0.0646987 (0.0000001)	0.0653000 (0.0006012)	PBT	1.0000000	9.0000000	162	0.0500000
0.0699160	0.0699155 (0.0000004)	0.0675000 (0.0024160)	PBT	1.0000000	9.0000000	216	0.0500000
0.0752505	0.0752505 (0.0000000)	0.0749000 (0.0003505)	PBT	1.0000000	9.0000000	270	0.0500000
0.0807020	0.0807019 (0.0000001)	0.0808000 (0.0000980)	PBT	1.0000000	9.0000000	324	0.0500000
0.0688724	0.0688717 (0.0000007)	0.0685000 (0.0003724)	PBT	1.0000000	18.0000000	54	0.0500000
0.0911293	0.0911288 (0.0000005)	0.0852000 (0.0059293)	PBT	1.0000000	18.0000000	108	0.0500000
0.1148422	0.1148420 (0.0000002)	0.1169000 (0.0020578)	PBT	1.0000000	18.0000000	162	0.0500000
0.1400062	0.1400061 (0.0000000)	0.1357000 (0.0043062)	PBT	1.0000000	18.0000000	216	0.0500000
0.1664236	0.1664233 (0.0000002)	0.1669000 (0.0004764)	PBT	1.0000000	18.0000000	270	0.0500000
0.1938811	0.1938803 (0.0000007)	0.1884000 (0.0054811)	PBT	1.0000000	18.0000000	324	0.0500000
0.0945430	0.0945430 (0.0000001)	0.0915000 (0.0030430)	PBT	1.0000000	27.0000000	54	0.0500000
0.1510837	0.1510836 (0.0000001)	0.1435000 (0.0075837)	PBT	1.0000000	27.0000000	108	0.0500000

0.2128413	0.2128412 (0.0000001)	0.2108000 (0.0020413)	PBT	1.0000000	27.0000000	162	0.0500000
0.2779726	0.2779725 (0.0000001)	0.2755000 (0.0024726)	PBT	1.0000000	27.0000000	216	0.0500000
0.3443974	0.3443971 (0.0000004)	0.3533000 (0.0089026)	PBT	1.0000000	27.0000000	270	0.0500000
0.4103081	0.4103079 (0.0000001)	0.4052000 (0.0051081)	PBT	1.0000000	27.0000000	324	0.0500000
0.0601453	0.0601450 (0.0000002)	0.0559000 (0.0042453)	PBT	1.0000000	9.0000000	54	0.0500000
0.0720271	0.0720268 (0.0000004)	0.0761000 (0.0040729)	PBT	1.0000000	9.0000000	108	0.0500000
0.0848771	0.0848769 (0.0000003)	0.0797000 (0.0051771)	PBT	1.0000000	9.0000000	162	0.0500000
0.0987574	0.0987572 (0.0000002)	0.0971000 (0.0016574)	PBT	1.0000000	9.0000000	216	0.0500000
0.1136445	0.1136437 (0.0000008)	0.1107000 (0.0029445)	PBT	1.0000000	9.0000000	270	0.0500000
0.1294961	0.1294958 (0.0000003)	0.1287000 (0.0007961)	PBT	1.0000000	9.0000000	324	0.0500000
0.0946510	0.0946506 (0.0000005)	0.0854000 (0.0092510)	PBT	1.0000000	18.0000000	54	0.0500000
0.1587014	0.1587008 (0.0000006)	0.1551000 (0.0036014)	PBT	1.0000000	18.0000000	108	0.0500000
0.2345468	0.2345465 (0.0000003)	0.2237000 (0.0108468)	PBT	1.0000000	18.0000000	162	0.0500000
0.3184412	0.3184405 (0.0000007)	0.3177000 (0.0007412)	PBT	1.0000000	18.0000000	216	0.0500000
0.4058255	0.4058253 (0.0000002)	0.3986000 (0.0072255)	PBT	1.0000000	18.0000000	270	0.0500000
0.4924248	0.4924246 (0.0000002)	0.4893000 (0.0031248)	PBT	1.0000000	18.0000000	324	0.0500000
0.1614203	0.1614198 (0.0000004)	0.1367000 (0.0247203)	PBT	1.0000000	27.0000000	54	0.0500000
0.3420219	0.3420214 (0.0000004)	0.3276000 (0.0144219)	PBT	1.0000000	27.0000000	108	0.0500000
0.5314167	0.5314160 (0.0000007)	0.5256000 (0.0058167)	PBT	1.0000000	27.0000000	162	0.0500000
0.6948390	0.6948385 (0.0000005)	0.6980000 (0.0031610)	PBT	1.0000000	27.0000000	216	0.0500000
0.8163956	0.8163953 (0.0000002)	0.8259000 (0.0095044)	PBT	1.0000000	27.0000000	270	0.0500000
0.8969621	0.8969618 (0.0000003)	0.9068000 (0.0098379)	PBT	1.0000000	27.0000000	324	0.0500000

0.0707595	0.0707589 (0.0000006)	0.0654000 (0.0053595)	PBT	1.0000000	9.0000000	54	0.0500000
0.0987167	0.0987165 (0.0000002)	0.0957000 (0.0030167)	PBT	1.0000000	9.0000000	108	0.0500000
0.1319980	0.1319977 (0.0000003)	0.1219000 (0.0100980)	PBT	1.0000000	9.0000000	162	0.0500000
0.1706327	0.1706324 (0.0000003)	0.1652000 (0.0054327)	PBT	1.0000000	9.0000000	216	0.0500000
0.2141890	0.2141881 (0.0000009)	0.2058000 (0.0083890)	PBT	1.0000000	9.0000000	270	0.0500000
0.2619750	0.2619745 (0.0000005)	0.2512000 (0.0107750)	PBT	1.0000000	9.0000000	324	0.0500000
0.1402104	0.1402096 (0.0000009)	0.1137000 (0.0265104)	PBT	1.0000000	18.0000000	54	0.0500000
0.3135447	0.3135443 (0.0000003)	0.2830000 (0.0305447)	PBT	1.0000000	18.0000000	108	0.0500000
0.5140796	0.5140791 (0.0000005)	0.4886000 (0.0254796)	PBT	1.0000000	18.0000000	162	0.0500000
0.6960093	0.6960090 (0.0000003)	0.6895000 (0.0065093)	PBT	1.0000000	18.0000000	216	0.0500000
0.8309431	0.8309428 (0.0000003)	0.8381000 (0.0071569)	PBT	1.0000000	18.0000000	270	0.0500000
0.9156879	0.9156874 (0.0000005)	0.9281000 (0.0124121)	PBT	1.0000000	18.0000000	324	0.0500000
0.2496627	0.2496620 (0.0000007)	0.1964000 (0.0532627)	PBT	1.0000000	27.0000000	54	0.0500000
0.6472975	0.6472970 (0.0000005)	0.6269000 (0.0203975)	PBT	1.0000000	27.0000000	108	0.0500000
0.8947691	0.8947688 (0.0000003)	0.9144000 (0.0196309)	PBT	1.0000000	27.0000000	162	0.0500000
0.9788403	0.9788400 (0.0000003)	0.9900000 (0.0111597)	PBT	1.0000000	27.0000000	216	0.0500000
0.9969392	0.9969389 (0.0000003)	0.9991000 (0.0021608)	PBT	1.0000000	27.0000000	270	0.0500000
0.9996642	0.9996640 (0.0000002)	1.0000000 (0.0003358)	PBT	1.0000000	27.0000000	324	0.0500000
0.0541541	0.0541540 (0.0000001)	0.0543000 (0.0001459)	HLT	1.0000000	9.0000000	54	0.0500000
0.0593144	0.0593144 (0.0000000)	0.0563000 (0.0030144)	HLT	1.0000000	9.0000000	108	0.0500000
0.0644404	0.0644403 (0.0000001)	0.0655000 (0.0010596)	HLT	1.0000000	9.0000000	162	0.0500000
0.0696673	0.0696669 (0.0000004)	0.0674000 (0.0022673)	HLT	1.0000000	9.0000000	216	0.0500000

0.0750068	0.0750068 (0.0000000)	0.0751000 (0.0000932)	HLT	1.0000000	9.0000000	270	0.0500000
0.0804613	0.0804612 (0.0000001)	0.0810000 (0.0005387)	HLT	1.0000000	9.0000000	324	0.0500000
0.0671899	0.0671893 (0.0000006)	0.0682000 (0.0010101)	HLT	1.0000000	18.0000000	54	0.0500000
0.0899567	0.0899563 (0.0000005)	0.0855000 (0.0044567)	HLT	1.0000000	18.0000000	108	0.0500000
0.1137872	0.1137871 (0.0000002)	0.1172000 (0.0034128)	HLT	1.0000000	18.0000000	162	0.0500000
0.1390269	0.1390268 (0.0000000)	0.1360000 (0.0030269)	HLT	1.0000000	18.0000000	216	0.0500000
0.1655163	0.1655161 (0.0000002)	0.1668000 (0.0012837)	HLT	1.0000000	18.0000000	270	0.0500000
0.1930511	0.1930504 (0.0000008)	0.1881000 (0.0049511)	HLT	1.0000000	18.0000000	324	0.0500000
0.0906959	0.0906959 (0.0000001)	0.0904000 (0.0002959)	HLT	1.0000000	27.0000000	54	0.0500000
0.1485815	0.1485814 (0.0000001)	0.1434000 (0.0051815)	HLT	1.0000000	27.0000000	108	0.0500000
0.2109194	0.2109192 (0.0000001)	0.2106000 (0.0003194)	HLT	1.0000000	27.0000000	162	0.0500000
0.2766063	0.2766063 (0.0000001)	0.2760000 (0.0006063)	HLT	1.0000000	27.0000000	216	0.0500000
0.3435988	0.3435984 (0.0000004)	0.3531000 (0.0095012)	HLT	1.0000000	27.0000000	270	0.0500000
0.4100665	0.4100664 (0.0000001)	0.4054000 (0.0046665)	HLT	1.0000000	27.0000000	324	0.0500000
0.0581548	0.0581547 (0.0000001)	0.0583000 (0.0001452)	HLT	1.0000000	9.0000000	54	0.0500000
0.0706321	0.0706318 (0.0000003)	0.0755000 (0.0048679)	HLT	1.0000000	9.0000000	108	0.0500000
0.0835978	0.0835976 (0.0000002)	0.0803000 (0.0032978)	HLT	1.0000000	9.0000000	162	0.0500000
0.0975362	0.0975361 (0.0000001)	0.0978000 (0.0002638)	HLT	1.0000000	9.0000000	216	0.0500000
0.1124725	0.1124718 (0.0000008)	0.1123000 (0.0001725)	HLT	1.0000000	9.0000000	270	0.0500000
0.1283776	0.1283773 (0.0000003)	0.1293000 (0.0009224)	HLT	1.0000000	9.0000000	324	0.0500000
0.0864469	0.0864467 (0.0000003)	0.0882000 (0.0017531)	HLT	1.0000000	18.0000000	54	0.0500000
0.1537495	0.1537489 (0.0000006)	0.1588000 (0.0050505)	HLT	1.0000000	18.0000000	108	0.0500000

0.2317030	0.2317026 (0.0000003)	0.2302000 (0.0015030)	HLT	1.0000000	18.0000000	162	0.0500000
0.3179402	0.3179394 (0.0000008)	0.3229000 (0.0049598)	HLT	1.0000000	18.0000000	216	0.0500000
0.4077398	0.4077396 (0.0000002)	0.4044000 (0.0033398)	HLT	1.0000000	18.0000000	270	0.0500000
0.4965555	0.4965552 (0.0000002)	0.4974000 (0.0008445)	HLT	1.0000000	18.0000000	324	0.0500000
0.1455407	0.1455403 (0.0000005)	0.1463000 (0.0007593)	HLT	1.0000000	27.0000000	54	0.0500000
0.3424917	0.3424909 (0.0000007)	0.3416000 (0.0008917)	HLT	1.0000000	27.0000000	108	0.0500000
0.5439112	0.5439110 (0.0000003)	0.5438000 (0.0001112)	HLT	1.0000000	27.0000000	162	0.0500000
0.7132961	0.7132959 (0.0000002)	0.7108000 (0.0024961)	HLT	1.0000000	27.0000000	216	0.0500000
0.8347714	0.8347709 (0.0000005)	0.8358000 (0.0010286)	HLT	1.0000000	27.0000000	270	0.0500000
0.9117423	0.9117422 (0.0000001)	0.9123000 (0.0005577)	HLT	1.0000000	27.0000000	324	0.0500000
0.0635245	0.0635235 (0.0000010)	0.0629000 (0.0006245)	HLT	1.0000000	9.0000000	54	0.0500000
0.0938573	0.0938565 (0.0000008)	0.0976000 (0.0037427)	HLT	1.0000000	9.0000000	108	0.0500000
0.1281204	0.1281201 (0.0000002)	0.1265000 (0.0016204)	HLT	1.0000000	9.0000000	162	0.0500000
0.1678546	0.1678543 (0.0000003)	0.1719000 (0.0040454)	HLT	1.0000000	9.0000000	216	0.0500000
0.2127760	0.2127751 (0.0000009)	0.2152000 (0.0024240)	HLT	1.0000000	9.0000000	270	0.0500000
0.2621800	0.2621794 (0.0000005)	0.2599000 (0.0022800)	HLT	1.0000000	9.0000000	324	0.0500000
0.1170101	0.1170094 (0.0000007)	0.1166000 (0.0004101)	HLT	1.0000000	18.0000000	54	0.0500000
0.3235600	0.3235598 (0.0000003)	0.3275000 (0.0039400)	HLT	1.0000000	18.0000000	108	0.0500000
0.5532284	0.5532277 (0.0000008)	0.5489000 (0.0043284)	HLT	1.0000000	18.0000000	162	0.0500000
0.7474432	0.7474425 (0.0000006)	0.7424000 (0.0050432)	HLT	1.0000000	18.0000000	216	0.0500000
0.8766603	0.8766600 (0.0000002)	0.8757000 (0.0009603)	HLT	1.0000000	18.0000000	270	0.0500000
0.9472831	0.9472826 (0.0000004)	0.9504000 (0.0031169)	HLT	1.0000000	18.0000000	324	0.0500000

0.2466998	0.2466990 (0.0000008)	0.2504000 (0.0037002)	HLT	1.0000000	27.0000000	54	0.0500000
0.7676163	0.7676156 (0.0000007)	0.7607000 (0.0069163)	HLT	1.0000000	27.0000000	108	0.0500000
0.9646132	0.9646129 (0.0000003)	0.9600000 (0.0046132)	HLT	1.0000000	27.0000000	162	0.0500000
0.9969743	0.9969741 (0.0000002)	0.9965000 (0.0004743)	HLT	1.0000000	27.0000000	216	0.0500000
0.9998368	0.9998367 (0.0000002)	1.0000000 (0.0001632)	HLT	1.0000000	27.0000000	270	0.0500000
0.9999940	0.9999939 (0.0000000)	1.0000000 (0.0000060)	HLT	1.0000000	27.0000000	324	0.0500000

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