Trivariate binary distributions with AR(1) structure with parameter Rho.

Marginal probabilities:
p1 = 0.2
p2 = 0.3
p3 = 0.5
Feasible range for rho is (-0.3273268, 0.6546537)

Table 1 Rho = -0.3273268
Lower Frechet Distribution

Y1	Y2	Y3	Method of Chaganty & Joe (2006) Range for P_{123} is 0
1	1	1	0.0000
0	1	1	0.0750
1	0	1	0.1214
1	1	0	0.0000
0	0	1	0.3036
0	1	0	0.2250
1	0	0	0.0786
0	0	0	0.1964

Table 2 Rho = -0.2

			Probability Distributions							
			Using First Order	Method of Chaganty & Joe (2006)						
Y1	Y2	Y3	Markov Chain Method	Range for P_{123} is [0, 0.0233]						
1	1	1	0.0081	0.0000	0.0007	0.0071	0.0125	0.0171	0.0205	0.0233
0	1	1	0.0961	0.1042	0.1035	0.0971	0.0916	0.0871	0.0836	0.0808
1	0	1	0.0999	0.1080	0.1073	0.1009	0.0955	0.0909	0.0875	0.0847
1	1	0	0.0152	0.0233	0.0227	0.0163	0.0108	0.0063	0.0028	0.0000
0	0	1	0.2959	0.2878	0.2885	0.2949	0.3004	0.3049	0.3084	0.3112
0	1	0	0.1806	0.1725	0.1732	0.1796	0.1850	0.1895	0.1930	0.1958
1	0	0	0.0768	0.0687	0.0693	0.0757	0.0812	0.0857	0.0892	0.0920
0	0	0	0.2274	0.2355	0.2348	0.2284	0.2230	0.2185	0.2150	0.2122

Table 3 Rho = 0.3

			Probability Distributions							
			Using First Order	Method of Chaganty & Joe (2006)						
Y1	Y2	Y3	Markov Chain Method	Range for P_{123} is [0.0337, 0.1150]						
1	1	1	0.0838	0.0337	0.0386	0.0475	0.0576	0.0720	0.1054	0.1150
0	1	1	0.1349	0.1850	0.1802	0.1713	0.1611	0.1468	0.1134	0.1037
1	0	1	0.0342	0.0843	0.0794	0.0705	0.0604	0.0460	0.0126	0.0030
1	1	0	0.0311	0.0813	0.0764	0.0675	0.0574	0.0430	0.0096	0.0000
0	0	1	0.2471	0.1970	0.2018	0.2107	0.2209	0.2352	0.2686	0.2783
0	1	0	0.0501	0.0000	0.0048	0.0137	0.0239	0.0382	0.0716	0.0813
1	0	0	0.0509	0.0007	0.0056	0.0145	0.0246	0.0390	0.0724	0.0820
0	0	0	0.3679	0.4180	0.4132	0.4043	0.3941	0.3798	0.3464	0.3367

Table 4 Rho = 0.4

			Probability Distributions							
			Using First Order	Method of Chaganty & Joe (2006)						
Y1	Y2	Y3	Markov Chain Method	Range for P_{123} is [0.0750, 0.1320]						
1	1	1	0.1074	0.0750	0.0806	0.0885	0.0921	0.0997	0.1238	0.1320
0	1	1	0.1343	0.1667	0.1610	0.1531	0.1495	0.1420	0.1178	0.1097
1	0	1	0.0246	0.0570	0.0514	0.0435	0.0399	0.0323	0.0082	0.0000
1	1	0	0.0259	0.0583	0.0527	0.0448	0.0412	0.0336	0.0095	0.0013
0	0	1	0.2337	0.2013	0.2070	0.2149	0.2185	0.2260	0.2502	0.2583
0	1	0	0.0324	0.0000	0.0056	0.0136	0.0172	0.0247	0.0488	0.0570
1	0	0	0.0421	0.0097	0.0153	0.0232	0.0268	0.0343	0.0585	0.0667
0	0	0	0.3996	0.4320	0.4264	0.4184	0.4148	0.4073	0.3832	0.3750

Table 5 Rho = 0.6546537
Upper Frechet Distribution

Y1	Y2	Y3	Method of Chaganty & Joe (2006) Range for P_{123} is 0.18000
1	1	1	*0.1800*
0	1	1	0.1200
1	0	1	0.0057
1	1	0	0.0000
0	0	1	0.0943
0	1	0	0.0000
1	0	0	0.0143
0	0	0	0.4857

Trivariate binary distributions with equicorrelated structure with constant correlation = Rho.

Marginal probabilities:
p1 = 0.21
p2 = 0.35
p3 = 0.52
Feasible range for rho is (-0.3783323, 0.4953533)

Table1
Rho = -0.3783323 Lower Frechet Distribution

			Probability Distributions	
			Method of Chaganty & Joe (2006)	QE
Y1	Y2	Y3	Range for P_{123} is 0	
1	1	1	*0.0000*	0.0002
0	1	1	0.0918	0.1038
1	0	1	0.0322	0.0424
1	1	0	0.0000	0.0097
0	0	1	0.3959	0.3736
0	1	0	0.2582	0.2363
1	0	0	0.1778	0.1577
0	0	0	0.0441	0.0763

QE= Quadratic Exponential

Table 2 Rho = -0.2

			Probability Distributior							
			Method of Chaganty & Joe (2006							QE
Y1	Y2	Y3	Range for P_{123} is [0, 0.0346]							
1	1	1	0.0000	0.0108	0.0183	0.0264	0.0074	0.0345	0.0346	0.0054
0	1	1	0.1343	0.1236	0.1161	0.1080	0.1269	0.0999	0.0997	0.1290
1	0	1	0.0685	0.0577	0.0502	0.0421	0.0611	0.0340	0.0339	0.0631
1	1	0	0.0346	0.0239	0.0164	0.0083	0.0272	0.0002	0.0000	0.0293
0	0	1	0.3172	0.3279	0.3354	0.3435	0.3246	0.3516	0.3518	0.3225
0	1	0	0.1810	0.1918	0.1993	0.2074	0.1885	0.2155	0.2157	0.1864
1	0	0	0.1069	0.1176	0.1251	0.1332	0.1143	0.1413	0.1415	0.1122
0	0	0	0.1575	0.1467	0.1392	0.1311	0.1500	0.1230	0.1228	0.1521

Table 3 Rho = 0.25

			Probability Distributior							
			Method of Chaganty & Joe (2006							QE
Y1	Y2	Y3	Range for P_{123} is [0.0721, 0.1220]							
1	1	1	0.0721	0.0750	0.0850	0.0905	0.1013	0.1155	0.1221	0.1015
0	1	1	0.1694	0.1665	0.1565	0.1511	0.1403	0.1260	0.1195	0.1400
1	0	1	0.0879	0.0850	0.0750	0.0696	0.0588	0.0445	0.0380	0.0585
1	1	0	0.0499	0.0470	0.0370	0.0316	0.0208	0.0065	0.0000	0.0205
0	0	1	0.1905	0.1934	0.2034	0.2089	0.2197	0.2339	0.2404	0.2199
0	1	0	0.0585	0.0614	0.0714	0.0769	0.0877	0.1019	0.1084	0.0879
1	0	0	0.0000	0.0029	0.0129	0.0184	0.0292	0.0434	0.0499	0.0294
0	0	0	0.3716	0.3687	0.3587	0.3532	0.3424	0.3282	0.3216	0.3422

Table 4 Rho = 0.4

			Probability Distributior							
			Method of Chaganty & Joe (2006							QE
Y1	Y2	Y3	Range for P_{123} is [0.1318, 0.1512]							
1	1	1	0.1318	0.1322	0.1331	0.1414	0.1476	0.1510	0.1512	0.1431
0	1	1	0.1455	0.1451	0.1443	0.1359	0.1297	0.1263	0.1261	0.1342
1	0	1	0.0588	0.0584	0.0575	0.0492	0.0429	0.0396	0.0394	0.0475
1	1	0	0.0194	0.0190	0.0182	0.0098	0.0036	0.0002	0.0000	0.0081
0	0	1	0.1839	0.1843	0.1851	0.1935	0.1997	0.2031	0.2033	0.1952
0	1	0	0.0533	0.0536	0.0545	0.0629	0.0691	0.0725	0.0727	0.0646
1	0	0	0.0000	0.0004	0.0012	0.0096	0.0158	0.0192	0.0194	0.0113
0	0	0	0.4073	0.4070	0.4061	0.3977	0.3915	0.3881	0.3879	0.3960

Table 5 Rho = 0.4953 Upper Frechet Distribution

			Probability Distributions	
			Method of Chaganty & Joe (2006)	QE
Y1	Y2	Y3	Range for P_{123} is [0.1697, 0.1697]	Both distributions are identical
1	1	1	0.1697	0.1697
0	1	1	0.1303	0.1303
1	0	1	0.0403	0.0403
1	1	0	0.0000	0.0000
0	0	1	0.1797	0.1797
0	1	0	0.0500	0.0500
1	0	0	0.0000	0.0000
0	0	0	0.4300	0.4300

Trivariate binary distributions with unstructured correlation matrix R.

Marginal probabilities:
p1 = 0.29
p2 = 0.17
p3 = 0.24

r12 = 0.7
r23 = 0.4
r13 = 0.8

$$R = \begin{matrix} 1 & 0.7 & 0.8 \\ 0.7 & 1 & 0.4 \\ 0.8 & 0.4 & 1 \end{matrix}$$

Note, for this choice of (p, R) there is **no distribution** in the conditional linear family (CLF) for any permutation.

Feasible range for rij given the other two correlations and marginal probabilities

	lower	upper
r12	-0.289	0.7081
r23	-0.254	0.8054
r13	0.1754	0.8089

Table 1

			Probability Distributions					QE
			Method of Chaganty & Joe (2006)					
Y1	Y2	Y3	Range for P_{123} is [0.1035841, 0.1049706]					
1	1	1	0.1036	0.1040	0.1045	0.1048	0.1049	0.1050
0	1	1	0.0014	0.0009	0.0005	0.0002	0.0000	0.1197
1	0	1	0.1210	0.1206	0.1201	0.1199	0.1197	0.0636
1	1	0	0.0650	0.0646	0.0641	0.0638	0.0637	0.0000
0	0	1	0.0140	0.0144	0.0149	0.0152	0.0153	0.0017
0	1	0	0.0000	0.0004	0.0009	0.0012	0.0013	0.0154
1	0	0	0.0003	0.0008	0.0012	0.0015	0.0017	0.0014
0	0	0	0.6946	0.6942	0.6937	0.6934	0.6933	0.6932