POWER SIMULATION FOR LOGISTIC REGRESSION

13. Jan 2003
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MODEL log(odds) = a + bx

Covariate values obtained as a sample from a standardized distribution.
Distribution considered: Normal, Uniform, Gamma(3) and Double Exponential

Simulated power and estimated power derived from equivalent two-sample test using either population values or sample values for mean and standard deviation of covariate

	Normal		Uniform		Gamma(3)		Double Exponential	
Sample size	mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.
n=100	-0.0706	1.0821	-0.0845	1.0653	-0.0356	1.0765	-0.0567	1.0717
n=200	-0.0482	1.0606	-0.0245	1.0433	-0.0264	0.9940	-0.0683	1.0690
n=500	-0.0041	0.9747	0.0028	0.9902	-0.0146	0.9473	-0.0353	1.0349
population	0.0000	1.0000	0.0000	1.0000	0.0000	1.0000	0.0000	1.0000

POWER: NORMAL COVARIATE

	n=100, a=-1.5			**n=100, a=-1.0**			**n=100, a=-0.5**			**n=100, a=0**		
b	simulation	population formula	sample formula	simulation	population formula	sample formula	simulation	population formula	sample formula	simulation	population formula	sample formula
0.00	0.0487	0.0500	0.0500	0.0469	0.0500	0.0500	0.0469	0.0500	0.0500	0.0472	0.0500	0.0500
0.05		0.0542	0.0549		0.0556	0.0565		0.0567	0.0578		0.0571	0.0583
0.10	0.0709	0.0670	0.0699	0.0718	0.0725	0.0763	0.0740	0.0770	0.0816	0.0804	0.0787	0.0837
0.15		0.0887	0.0951		0.1012	0.1099		0.1115	0.1221		0.1155	0.1270
0.20	0.1247	0.1194	0.1307	0.1526	0.1421	0.1575	0.1697	0.1607	0.1796	0.1795	0.1680	0.1886
0.25		0.1593	0.1769		0.1953	0.2190		0.2244	0.2535		0.2357	0.2676
0.30	0.2246	0.2083	0.2330	0.2880	0.2599	0.2930	0.3322	0.3011	0.3414	0.3428	0.3171	0.3612
0.35		0.2657	0.2980		0.3343	0.3769		0.3882	0.4390	0.4407	0.4087	0.4640
0.40	0.3598	0.3301	0.3699	0.4664	0.4159	0.4667	0.5300	0.4812	0.5403	0.5433	0.5056	0.5694
0.45		0.3999	0.4462		0.5012	0.5580		0.5753	0.6389	0.6444	0.6023	0.6701
0.50	0.5291	0.4729	0.5241	0.6444	0.5863	0.6460	0.7163	0.6653	0.7290	0.7365	0.6931	0.7598
0.55		0.5465	0.6006		0.6674	0.7265		0.7467	0.8062	0.8083	0.7734	0.8344
0.60	0.6837	0.6183	0.6730	0.7936	0.7413	0.7966	0.8512	0.8164	0.8683	0.8718	0.8405	0.8923
0.65	0.7653	0.6861	0.7390	0.8500	0.8056	0.8545	0.9030	0.8728	0.9151	0.9442	0.8931	0.9340
0.70	0.8201	0.7479	0.7971	0.9024	0.8591	0.9001	0.9364	0.9159	0.9482	0.9661	0.9320	0.9621
0.75	0.8680	0.8025	0.8465	0.9353	0.9016	0.9343	0.9592	0.9471	0.9702		0.9590	0.9796
0.80	0.9075	0.8492	0.8870	0.9580	0.9339	0.9585		0.9683	0.9838		0.9766	0.9897
0.85	0.9356	0.8878	0.9191	0.9734	0.9573	0.9750		0.9820	0.9917		0.9874	0.9952
0.90	0.9556	0.9188	0.9438		0.9736	0.9856		0.9903	0.9960		0.9936	0.9979
0.95	0.9727	0.9428	0.9620		0.9843	0.9921		0.9951	0.9982		0.9970	0.9992

POWER: UNIFORM COVARIATE

	n=100, a=-1.5			n=100, a=-1.0			n=100, a=-0.5			n=100, a=0		
b	simulation	population formula	sample formula	simulation	population formula	sample formula	simulation	population formula	sample formula	simulation	population formula	sample formula
0.00	0.0475	0.0500	0.0500	0.0460	0.0500	0.0500	0.0480	0.0500	0.0500	0.0461	0.0500	0.0500
0.05		0.0542	0.0548		0.0556	0.0563		0.0567	0.0576		0.0571	0.0581
0.10	0.0709	0.0670	0.0693	0.0704	0.0725	0.0755	0.0749	0.0770	0.0806	0.0834	0.0787	0.0827
0.15		0.0887	0.0936		0.1012	0.1079		0.1115	0.1198		0.1155	0.1246
0.20	0.1207	0.1194	0.1281	0.1540	0.1421	0.1540	0.1691	0.1607	0.1754	0.1798	0.1680	0.1842
0.25		0.1593	0.1727		0.1953	0.2135		0.2244	0.2471		0.2357	0.2609
0.30	0.2169	0.2083	0.2269	0.2815	0.2599	0.2852	0.3349	0.3011	0.3325	0.3447	0.3171	0.3520
0.35		0.2657	0.2898		0.3343	0.3666		0.3882	0.4276	0.4350	0.4087	0.4526
0.40	0.3468	0.3301	0.3595	0.4577	0.4159	0.4544	0.5314	0.4812	0.5271	0.5407	0.5056	0.5564
0.45		0.3999	0.4338		0.5012	0.5440		0.5753	0.6248	0.6424	0.6023	0.6565
0.50	0.5173	0.4729	0.5101	0.6413	0.5863	0.6311	0.7140	0.6653	0.7150	0.7325	0.6931	0.7468
0.55		0.5465	0.5855		0.6674	0.7117		0.7467	0.7932	0.8057	0.7734	0.8228
0.60	0.6693	0.6183	0.6573	0.7852	0.7413	0.7826	0.8498	0.8164	0.8571	0.9129	0.8405	0.8827
0.65	0.7470	0.6861	0.7235	0.8449	0.8056	0.8421	0.8972	0.8728	0.9061	0.9438	0.8931	0.9267
0.70	0.8057	0.7479	0.7824	0.8938	0.8591	0.8897	0.9362	0.9159	0.9415	0.9660	0.9320	0.9569
0.75	0.8559	0.8025	0.8330	0.9338	0.9016	0.9259	0.9578	0.9471	0.9655		0.9590	0.9762
0.80	0.8948	0.8492	0.8751	0.9543	0.9339	0.9522		0.9683	0.9807		0.9766	0.9877
0.85	0.9286	0.8878	0.9091	0.9742	0.9573	0.9704		0.9820	0.9899		0.9874	0.9941
0.90	0.9499	0.9188	0.9355		0.9736	0.9825		0.9903	0.9950		0.9936	0.9973
0.95	0.9676	0.9428	0.9555		0.9843	0.9901		0.9951	0.9977		0.9970	0.9989

POWER: DOUBLE EXPONENTIAL COVARIATE

	n=100, a=-1.5			n=100, a=-1.0			n=100, a=-0.5			n=100, a=0		
b	simulation	population formula	sample formula	simulation	population formula	sample formula	simulation	population formula	sample formula	simulation	population formula	sample formula
0.00	0.0499	0.0500	0.0500	0.0468	0.0500	0.0500	0.0448	0.0500	0.0500	0.0455	0.0500	0.0500
0.05		0.0542	0.0549		0.0556	0.0564		0.0567	0.0577		0.0571	0.0582
0.10	0.0703	0.0670	0.0695	0.0699	0.0725	0.0758	0.0705	0.0770	0.0810	0.0792	0.0787	0.0831
0.15		0.0887	0.0943		0.1012	0.1088		0.1115	0.1207		0.1155	0.1255
0.20	0.1262	0.1194	0.1293	0.1459	0.1421	0.1556	0.1621	0.1607	0.1772	0.1697	0.1680	0.1859
0.25		0.1593	0.1747		0.1953	0.2160		0.2244	0.2498		0.2357	0.2635
0.30	0.2240	0.2083	0.2300	0.2807	0.2599	0.2889	0.3214	0.3011	0.3364	0.3272	0.3171	0.3555
0.35		0.2657	0.2941		0.3343	0.3717		0.3882	0.4327	0.4246	0.4087	0.4570
0.40	0.3551	0.3301	0.3652	0.4558	0.4159	0.4607	0.5175	0.4812	0.5331	0.5199	0.5056	0.5614
0.45		0.3999	0.4409		0.5012	0.5514		0.5753	0.6314	0.6197	0.6023	0.6618
0.50	0.5283	0.4729	0.5184	0.6239	0.5863	0.6392	0.6931	0.6653	0.7217	0.7141	0.6931	0.7519
0.55		0.5465	0.5947		0.6674	0.7200		0.7467	0.7996	0.7883	0.7734	0.8274
0.60	0.6787	0.6183	0.6672	0.7796	0.7413	0.7907	0.8324	0.8164	0.8627	0.8493	0.8405	0.8865
0.65	0.7554	0.6861	0.7336	0.8360	0.8056	0.8495	0.8881	0.8728	0.9107	0.8956	0.8931	0.9297
0.70	0.8145	0.7479	0.7923	0.8871	0.8591	0.8961	0.9225	0.9159	0.9450	0.9313	0.9320	0.9590
0.75	0.8560	0.8025	0.8423	0.9281	0.9016	0.9312	0.9472	0.9471	0.9680	0.9586	0.9590	0.9776
0.80	0.9043	0.8492	0.8836	0.9525	0.9339	0.9563		0.9683	0.9824		0.9766	0.9886
0.85	0.9318	0.8878	0.9164	0.9671	0.9573	0.9735		0.9820	0.9909		0.9874	0.9945
0.90	0.9548	0.9188	0.9417		0.9736	0.9846		0.9903	0.9956		0.9936	0.9976
0.95	0.9691	0.9428	0.9605		0.9843	0.9915		0.9951	0.9980		0.9970	0.9990

POWER: NORMAL COVARIATE

	n=200, a=-1.5			n=200, a=-1.0			n=200, a=-0.5			n=200, a=0		
b	simulation	population formula	sample formula	simulation	population formula	sample formula	simulation	population formula	sample formula	simulation	population formula	sample formula
0.00	0.0516	0.0500	0.0500	0.0517	0.0500	0.0500	0.0473	0.0500	0.0500	0.0451	0.0500	0.0500
0.05		0.0585	0.0596		0.0613	0.0627		0.0635	0.0652		0.0644	0.0662
0.10	0.0839	0.0846	0.0888	0.0992	0.0958	0.1015	0.1063	0.1049	0.1119	0.1096	0.1085	0.1160
0.15		0.1290	0.1387		0.1549	0.1679		0.1760	0.1919		0.1843	0.2014
0.20	0.1975	0.1922	0.2093	0.2546	0.2386	0.2614	0.2907	0.2759	0.3034	0.3075	0.2904	0.3200
0.25	0.2841	0.2732	0.2989	0.3664	0.3437	0.3770	0.4154	0.3988	0.4378	0.4508	0.4197	0.4615
0.30	0.3862	0.3687	0.4029	0.4761	0.4628	0.5049	0.5604	0.5328	0.5799	0.5892	0.5585	0.6082
0.35	0.4890	0.4730	0.5138	0.6141	0.5853	0.6320	0.6876	0.6633	0.7122	0.7271	0.6906	0.7409
0.40	0.5986	0.5789	0.6232	0.7286	0.6998	0.7458	0.8033	0.7765	0.8207	0.8275	0.8018	0.8457
0.45	0.7095	0.6791	0.7231	0.8124	0.7973	0.8376	0.8918	0.8643	0.8991	0.8992	0.8848	0.9178
0.50	0.7894	0.7674	0.8075	0.8873	0.8729	0.9045	0.9367	0.9250	0.9489	0.9551	0.9395	0.9612
0.55	0.8640	0.8402	0.8737	0.9375	0.9262	0.9485	0.9684	0.9625	0.9769	0.9774	0.9715	0.9838
0.60	0.9139	0.8960	0.9219	0.9684	0.9605	0.9745		0.9831	0.9907	0.9909	0.9880	0.9941
0.65	0.9493	0.9361	0.9546		0.9805	0.9885		0.9931	0.9967		0.9955	0.9981
0.70	0.9739	0.9629	0.9752		0.9912	0.9953		0.9975	0.9990		0.9985	0.9995
0.75		0.9797	0.9873		0.9963	0.9982		0.9992	0.9997		0.9996	0.9999
0.80		0.9896	0.9939		0.9986	0.9994		0.9998	0.9999		0.9999	
0.85		0.9950	0.9972		0.9995	0.9998		0.9999				
0.90		0.9977	0.9988		0.9998	0.9999						
0.95		0.9990	0.9995									

POWER: UNIFORM COVARIATE

	n=200, a=-1.5			n=200, a=-1.0			n=200, a=-0.5			n=200, a=0		
b	simulation	population formula	sample formula	simulation	population formula	sample formula	simulation	population formula	sample formula	simulation	population formula	sample formula
0.00	0.0523	0.0500	0.0500	0.0516	0.0500	0.0500	0.0496	0.0500	0.0500	0.0463	0.0500	0.0500
0.05		0.0585	0.0593		0.0613	0.0623		0.0635	0.0647		0.0644	0.0656
0.10	0.0859	0.0846	0.0876	0.0989	0.0958	0.0999	0.1079	0.1049	0.1099	0.1103	0.1085	0.1138
0.15		0.1290	0.1359		0.1549	0.1642		0.1760	0.1873		0.1843	0.1964
0.20	0.2020	0.1922	0.2045	0.2553	0.2386	0.2550	0.2890	0.2759	0.2956	0.3036	0.2904	0.3115
0.25	0.2839	0.2732	0.2919	0.3660	0.3437	0.3678	0.4132	0.3988	0.4268	0.4444	0.4197	0.4495
0.30	0.3928	0.3687	0.3937	0.4811	0.4628	0.4935	0.5593	0.5328	0.5669	0.5834	0.5585	0.5942
0.35	0.4950	0.4730	0.5031	0.6157	0.5853	0.6196	0.6891	0.6633	0.6990	0.7234	0.6906	0.7270
0.40	0.5989	0.5789	0.6119	0.7288	0.6998	0.7339	0.8033	0.7765	0.8091	0.9197	0.8018	0.8339
0.45	0.7124	0.6791	0.7122	0.8131	0.7973	0.8276	0.8923	0.8643	0.8903	0.8970	0.8848	0.9093
0.50	0.7931	0.7674	0.7979	0.8935	0.8729	0.8969	0.9384	0.9250	0.9431	0.9513	0.9395	0.9558
0.55	0.8661	0.8402	0.8660	0.9414	0.9262	0.9433	0.9690	0.9625	0.9736	0.9762	0.9715	0.9809
0.60	0.9220	0.8960	0.9162	0.9704	0.9605	0.9714		0.9831	0.9890	0.9890	0.9880	0.9927
0.65	0.9552	0.9361	0.9507		0.9805	0.9868		0.9931	0.9959		0.9955	0.9976
0.70	0.9751	0.9629	0.9727		0.9912	0.9945		0.9975	0.9987		0.9985	0.9993
0.75		0.9797	0.9858		0.9963	0.9979		0.9992	0.9996		0.9996	0.9998
0.80		0.9896	0.9931		0.9986	0.9993		0.9998	0.9999		0.9999	
0.85		0.9950	0.9969		0.9995	0.9998		0.9999				
0.90		0.9977	0.9987		0.9998	0.9999						
0.95		0.9990	0.9995									

POWER: DOUBLE EXPONENTIAL COVARIATE

	n=200, a=-1.5			n=200, a=-1.0			n=200, a=-0.5			n=200, a=0		
b	simulation	population formula	sample formula	simulation	population formula	sample formula	simulation	population formula	sample formula	simulation	population formula	sample formula
0.00	0.0505	0.0500	0.0500	0.0484	0.0500	0.0500	0.0459	0.0500	0.0500	0.0466	0.0500	0.0500
0.05		0.0585	0.0597		0.0613	0.0629		0.0635	0.0654		0.0644	0.0664
0.10	0.0803	0.0846	0.0894	0.0960	0.0958	0.1023	0.1049	0.1049	0.1129	0.1089	0.1085	0.1171
0.15		0.1290	0.1399		0.1549	0.1697		0.1760	0.1941		0.1843	0.2039
0.20	0.1870	0.1922	0.2115	0.2483	0.2386	0.2644	0.2850	0.2759	0.3071	0.3053	0.2904	0.3242
0.25	0.2635	0.2732	0.3020	0.3482	0.3437	0.3812	0.4030	0.3988	0.4430	0.4410	0.4197	0.4673
0.30	0.3723	0.3687	0.4068	0.4561	0.4628	0.5100	0.5427	0.5328	0.5859	0.5838	0.5585	0.6149
0.35	0.4638	0.4730	0.5182	0.5928	0.5853	0.6373	0.6745	0.6633	0.7182	0.7147	0.6906	0.7475
0.40	0.5697	0.5789	0.6277	0.7036	0.6998	0.7507	0.7858	0.7765	0.8258	0.8217	0.8018	0.8512
0.45	0.6790	0.6791	0.7271	0.7914	0.7973	0.8417	0.8766	0.8643	0.9028	0.8929	0.8848	0.9218
0.50	0.7657	0.7674	0.8109	0.8695	0.8729	0.9075	0.9264	0.9250	0.9514	0.9482	0.9395	0.9636
0.55	0.8428	0.8402	0.8763	0.9180	0.9262	0.9504	0.9615	0.9625	0.9783	0.9737	0.9715	0.9851
0.60	0.8976	0.8960	0.9238	0.9590	0.9605	0.9756		0.9831	0.9914	0.9891	0.9880	0.9946
0.65	0.9373	0.9361	0.9558		0.9805	0.9891		0.9931	0.9970		0.9955	0.9983
0.70	0.9659	0.9629	0.9759		0.9912	0.9955		0.9975	0.9991		0.9985	0.9995
0.75		0.9797	0.9876		0.9963	0.9983		0.9992	0.9997		0.9996	0.9999
0.80		0.9896	0.9941		0.9986	0.9994		0.9998	0.9999		0.9999	
0.85		0.9950	0.9973		0.9995	0.9998		0.9999				
0.90		0.9977	0.9989		0.9998							
0.95		0.9990	0.9996									

POWER: NORMAL COVARIATE

	n=500, a=-1.5			n=500, a=-1.0			n=500, a=-0.5			n=500, a=0		
b	simulation	population formula	sample formula	simulation	population formula	sample formula	simulation	population formula	sample formula	simulation	population formula	sample formula
0.00	0.0499	0.0500	0.0500	0.0513	0.0500	0.0500	0.0478	0.0500	0.0500	0.0495	0.0500	0.0500
0.05	0.0734	0.0716	0.0705	0.0756	0.0785	0.0771	0.0822	0.0842	0.0824	0.0889	0.0864	0.0846
0.10	0.1326	0.1385	0.1339	0.1539	0.1675	0.1615	0.1802	0.1911	0.1839	0.1972	0.2004	0.1927
0.15	0.2405	0.2526	0.2423	0.3009	0.3171	0.3039	0.3530	0.3679	0.3525	0.3774	0.3872	0.3712
0.20	0.3905	0.4055	0.3887	0.4716	0.5066	0.4866	0.5543	0.5799	0.5584	0.5841	0.6064	0.5846
0.25	0.5481	0.5749	0.5533	0.6564	0.6947	0.6723	0.7465	0.7708	0.7495	0.7659	0.7959	0.7754
0.30	0.7071	0.7310	0.7089	0.8169	0.8417	0.8227	0.8754	0.8999	0.8847	0.8995	0.9169	0.9032
0.35	0.8337	0.8513	0.8328	0.9120	0.9323	0.9200	0.9527	0.9657	0.9578	0.9612	0.9740	0.9674
0.40	0.9138	0.9288	0.9161	0.9663	0.9764	0.9702	0.9851	0.9909	0.9879	0.9904	0.9938	0.9916
0.45	0.9660	0.9707	0.9635	0.9894	0.9934	0.9909	0.9956	0.9982	0.9973	0.9971	0.9989	0.9983
0.50	0.9860	0.9897	0.9863	0.9973	0.9985	0.9978	0.9991	0.9997	0.9995		0.9999	0.9998
0.55		0.9969	0.9956		0.9997	0.9996			0.9999			
0.60		0.9992	0.9988			0.9999						
0.65		0.9998	0.9997									
0.70			0.9999									

POWER: UNIFORM COVARIATE

	n=500, a=-1.5			n=500, a=-1.0			n=500, a=-0.5			n=500, a=0		
b	simulation	population formula	sample formula	simulation	population formula	sample formula	simulation	population formula	sample formula	simulation	population formula	sample formula
0.00	0.0517	0.0500	0.0500	0.0499	0.0500	0.0500	0.0471	0.0500	0.0500	0.0479	0.0500	0.0500
0.05	0.0766	0.0716	0.0711	0.0756	0.0785	0.0780	0.0815	0.0842	0.0835	0.0847	0.0864	0.0857
0.10	0.1358	0.1385	0.1367	0.1576	0.1675	0.1652	0.1901	0.1911	0.1883	0.2052	0.2004	0.1974
0.15	0.2476	0.2526	0.2486	0.3086	0.3171	0.3120	0.3658	0.3679	0.3619	0.3874	0.3872	0.3810
0.20	0.3997	0.4055	0.3992	0.4898	0.5066	0.4990	0.5708	0.5799	0.5717	0.5985	0.6064	0.5980
0.25	0.5650	0.5749	0.5668	0.6777	0.6947	0.6863	0.7595	0.7708	0.7628	0.7826	0.7959	0.7881
0.30	0.7199	0.7310	0.7229	0.8335	0.8417	0.8347	0.8908	0.8999	0.8943	0.9119	0.9169	0.9118
0.35	0.8541	0.8513	0.8446	0.9242	0.9323	0.9279	0.9602	0.9657	0.9629	0.9686	0.9740	0.9716
0.40	0.9234	0.9288	0.9244	0.9705	0.9764	0.9743	0.9881	0.9909	0.9899	0.9929	0.9938	0.9930
0.45	0.9704	0.9707	0.9682	0.9928	0.9934	0.9926	0.9964	0.9982	0.9979	0.9981	0.9989	0.9987
0.50	0.9886	0.9897	0.9886	0.9982	0.9985	0.9983	0.9996	0.9997	0.9997		0.9999	0.9998
0.55		0.9969	0.9965		0.9997	0.9997						
0.60		0.9992	0.9991									
0.65		0.9998	0.9998									

POWER: DOUBLE EXPONENTIAL COVARIATE

	n=500, a=-1.5			n=500, a=-1.0			n=500, a=-0.5			n=500, a=0		
b	simulation	population formula	sample formula	simulation	population formula	sample formula	simulation	population formula	sample formula	simulation	population formula	sample formula
0.00	0.0458	0.0500	0.0500	0.0502	0.0500	0.0500	0.0508	0.0500	0.0500	0.0517	0.0500	0.0500
0.05	0.0666	0.0716	0.0731	0.0804	0.0785	0.0806	0.0769	0.0842	0.0866	0.0852	0.0864	0.0890
0.10	0.1361	0.1385	0.1447	0.1756	0.1675	0.1759	0.1910	0.1911	0.2013	0.2131	0.2004	0.2113
0.15	0.2646	0.2526	0.2663	0.3330	0.3171	0.3350	0.3736	0.3679	0.3889	0.4143	0.3872	0.4097
0.20	0.4162	0.4055	0.4273	0.5198	0.5066	0.5327	0.5939	0.5799	0.6084	0.6339	0.6064	0.6360
0.25	0.5954	0.5749	0.6015	0.7095	0.6947	0.7223	0.7825	0.7708	0.7975	0.8159	0.7959	0.8223
0.30	0.7608	0.7310	0.7568	0.8512	0.8417	0.8636	0.9101	0.8999	0.9177	0.9257	0.9169	0.9334
0.35	0.8701	0.8513	0.8715	0.9386	0.9323	0.9456	0.9723	0.9657	0.9743	0.9765	0.9740	0.9812
0.40	0.9438	0.9288	0.9417	0.9815	0.9764	0.9825	0.9929	0.9909	0.9939	0.9940	0.9938	0.9961
0.45	0.9768	0.9707	0.9775	0.9949	0.9934	0.9955	0.9984	0.9982	0.9989	0.9987	0.9989	0.9994
0.50	0.9927	0.9897	0.9926	0.9988	0.9985	0.9991	1.0000	0.9997	0.9999		0.9999	0.9999
0.55		0.9969	0.9979		0.9997	0.9999						
0.60		0.9992	0.9995									
0.65		0.9998	0.9999									

POWER: GAMMA COVARIATE

	n=100, a=-1.5			n=100, a=-1.0			n=100, a=-0.5			n=100, a=0		
b	simulation	population formula	sample formula	simulation	population formula	sample formula	simulation	population formula	sample formula	simulation	population formula	sample formula
-0.95	0.9013	0.9428	0.9705		0.9843	0.9939		0.9951	0.9985		0.9970	0.9991
-0.90	0.8653	0.9188	0.9542		0.9736	0.9883		0.9903	0.9965		0.9936	0.9977
-0.85	0.8198	0.8878	0.9314	0.9349	0.9573	0.9789		0.9820	0.9925		0.9874	0.9949
-0.80	0.7795	0.8492	0.9009	0.9007	0.9339	0.9637		0.9683	0.9849		0.9766	0.9891
-0.75	0.7175	0.8025	0.8614	0.8613	0.9016	0.9406	0.9352	0.9471	0.9717	0.9593	0.9590	0.9786
-0.70	0.6529	0.7479	0.8124	0.8169	0.8591	0.9076	0.9021	0.9159	0.9501	0.9380	0.9320	0.9605
-0.65	0.5918	0.6861	0.7539	0.7619	0.8056	0.8626	0.8572	0.8728	0.9172	0.9025	0.8931	0.9318
-0.60	0.5147	0.6183	0.6868	0.6889	0.7413	0.8047	0.8000	0.8164	0.8704	0.8551	0.8405	0.8893
-0.55		0.5465	0.6126		0.6674	0.7342		0.7467	0.8081	0.7926	0.7734	0.8308
-0.50	0.3809	0.4729	0.5339	0.5240	0.5863	0.6526	0.6489	0.6653	0.7305	0.7078	0.6931	0.7556
-0.45		0.3999	0.4537		0.5012	0.5632		0.5753	0.6398	0.6290	0.6023	0.6657
-0.40	0.2594	0.3301	0.3752	0.3629	0.4159	0.4704	0.4646	0.4812	0.5405	0.5295	0.5056	0.5652
-0.35		0.2657	0.3014		0.3343	0.3791		0.3882	0.4386	0.4362	0.4087	0.4603
-0.30	0.1515	0.2083	0.2349	0.2274	0.2599	0.2941	0.2826	0.3011	0.3408	0.3322	0.3171	0.3581
-0.25		0.1593	0.1778		0.1953	0.2194		0.2244	0.2528		0.2357	0.2654
-0.20	0.0825	0.1194	0.1310	0.1199	0.1421	0.1575	0.1467	0.1607	0.1789	0.1738	0.1680	0.1871
-0.15		0.0887	0.0951		0.1012	0.1097		0.1115	0.1216		0.1155	0.1262
-0.10	0.0467	0.0670	0.0698	0.0562	0.0725	0.0762	0.0719	0.0770	0.0814	0.0762	0.0787	0.0834
-0.05		0.0542	0.0549		0.0556	0.0565		0.0567	0.0578		0.0571	0.0582
0.00	0.0445	0.0500	0.0500	0.0429	0.0500	0.0500	0.0459	0.0500	0.0500	0.0445	0.0500	0.0500
0.05		0.0542	0.0549		0.0556	0.0565		0.0567	0.0577		0.0571	0.0582
0.10	0.0785	0.0670	0.0697	0.0776	0.0725	0.0761	0.0742	0.0770	0.0813	0.0775	0.0787	0.0834
0.15		0.0887	0.0948		0.1012	0.1094		0.1115	0.1214		0.1155	0.1262
0.20	0.1450	0.1194	0.1303	0.1656	0.1421	0.1568	0.1752	0.1607	0.1785	0.1732	0.1680	0.1871
0.25		0.1593	0.1763		0.1953	0.2180		0.2244	0.2519		0.2357	0.2654
0.30	0.2612	0.2083	0.2324	0.3229	0.2599	0.2917	0.3420	0.3011	0.3393	0.3276	0.3171	0.3581
0.35		0.2657	0.2974		0.3343	0.3755		0.3882	0.4364	0.4257	0.4087	0.4603
0.40	0.4264	0.3301	0.3695	0.5106	0.4159	0.4654	0.5494	0.4812	0.5376	0.5291	0.5056	0.5652
0.45		0.3999	0.4462		0.5012	0.5569		0.5753	0.6363	0.6274	0.6023	0.6657
0.50	0.6181	0.4729	0.5246	0.6909	0.5863	0.6452	0.7346	0.6653	0.7266	0.7153	0.6931	0.7556
0.55		0.5465	0.6017		0.6674	0.7262		0.7467	0.8042	0.7922	0.7734	0.8308
0.60	0.7737	0.6183	0.6746	0.8375	0.7413	0.7967	0.8673	0.8164	0.8668	0.8526	0.8405	0.8893
0.65	0.8416	0.6861	0.7411	0.8888	0.8056	0.8549	0.9107	0.8728	0.9141	0.9001	0.8931	0.9318
0.70	0.8890	0.7479	0.7996	0.9301	0.8591	0.9007	0.9446	0.9159	0.9476	0.9344	0.9320	0.9605
0.75	0.9256	0.8025	0.8492	0.9582	0.9016	0.9350	0.9650	0.9471	0.9698	0.9602	0.9590	0.9786
0.80	0.9546	0.8492	0.8897	0.9756	0.9339	0.9592		0.9683	0.9836		0.9766	0.9891
0.85	0.9694	0.8878	0.9217	0.9858	0.9573	0.9756		0.9820	0.9917		0.9874	0.9949
0.90	0.9827	0.9188	0.9461		0.9736	0.9861		0.9903	0.9960		0.9936	0.9977
0.95	0.9911	0.9428	0.9640		0.9843	0.9924		0.9951	0.9982		0.9970	0.9991

POWER: GAMMA COVARIATE

	n=200, a=-1.5			n=200, a=-1.0			n=200, a=-0.5			n=200, a=0		
b	simulation	population formula	sample formula	simulation	population formula	sample formula	simulation	population formula	sample formula	simulation	population formula	sample formula
-0.95		0.9990	0.9991									
-0.90		0.9977	0.9978		0.9998	0.9998						
-0.85		0.9950	0.9951		0.9995	0.9995		0.9999	0.9999			
-0.80		0.9896	0.9897		0.9986	0.9986		0.9998	0.9998		0.9999	0.9999
-0.75		0.9797	0.9799		0.9963	0.9963		0.9992	0.9991		0.9996	0.9995
-0.70	0.9329	0.9629	0.9630		0.9912	0.9910		0.9975	0.9974		0.9985	0.9984
-0.65	0.8913	0.9361	0.9359		0.9805	0.9802		0.9931	0.9928		0.9955	0.9951
-0.60	0.8418	0.8960	0.8956	0.9341	0.9605	0.9598		0.9831	0.9824	0.9829	0.9880	0.9872
-0.55	0.7701	0.8402	0.8393	0.8857	0.9262	0.9250	0.9410	0.9625	0.9612	0.9597	0.9715	0.9700
-0.50	0.6969	0.7674	0.7661	0.8228	0.8729	0.8710	0.9011	0.9250	0.9229	0.9294	0.9395	0.9370
-0.45	0.5973	0.6791	0.6773	0.7360	0.7973	0.7948	0.8276	0.8643	0.8613	0.8723	0.8848	0.8810
-0.40	0.5051	0.5789	0.5767	0.6345	0.6998	0.6968	0.7435	0.7765	0.7727	0.7826	0.8018	0.7971
-0.35	0.4020	0.4730	0.4707	0.5319	0.5853	0.5821	0.6187	0.6633	0.6590	0.6653	0.6906	0.6854
-0.30	0.3126	0.3687	0.3666	0.4125	0.4628	0.4598	0.4950	0.5328	0.5288	0.5329	0.5585	0.5536
-0.25	0.2257	0.2732	0.2715	0.3025	0.3437	0.3412	0.3784	0.3988	0.3954	0.4084	0.4197	0.4156
-0.20	0.1586	0.1922	0.1910	0.2063	0.2386	0.2368	0.2606	0.2759	0.2735	0.2845	0.2904	0.2875
-0.15		0.1290	0.1282		0.1549	0.1538		0.1760	0.1746		0.1843	0.1826
-0.10	0.0708	0.0846	0.0842	0.0863	0.0958	0.0953	0.1006	0.1049	0.1043	0.0999	0.1085	0.1078
-0.05		0.0585	0.0584		0.0613	0.0611		0.0635	0.0633		0.0644	0.0642
0.00	0.0535	0.0500	0.0500	0.0489	0.0500	0.0500	0.0496	0.0500	0.0500	0.0452	0.0500	0.0500
0.05		0.0585	0.0584		0.0613	0.0611		0.0635	0.0633		0.0644	0.0642
0.10	0.0877	0.0846	0.0841	0.0987	0.0958	0.0952	0.1050	0.1049	0.1042	0.1038	0.1085	0.1078
0.15		0.1290	0.1278		0.1549	0.1534		0.1760	0.1743		0.1843	0.1826
0.20	0.2071	0.1922	0.1900	0.2554	0.2386	0.2359	0.2719	0.2759	0.2729	0.2746	0.2904	0.2875
0.25	0.2968	0.2732	0.2696	0.3655	0.3437	0.3395	0.3900	0.3988	0.3943	0.3981	0.4197	0.4156
0.30	0.4062	0.3687	0.3635	0.4774	0.4628	0.4570	0.5335	0.5328	0.5272	0.5325	0.5585	0.5536
0.35	0.5142	0.4730	0.4663	0.6062	0.5853	0.5784	0.6625	0.6633	0.6570	0.6748	0.6906	0.6854
0.40	0.6161	0.5789	0.5710	0.7233	0.6998	0.6925	0.7797	0.7765	0.7705	0.7790	0.8018	0.7971
0.45	0.7340	0.6791	0.6706	0.8125	0.7973	0.7903	0.8681	0.8643	0.8592	0.8624	0.8848	0.8810
0.50	0.8196	0.7674	0.7590	0.8877	0.8729	0.8669	0.9243	0.9250	0.9213	0.9277	0.9395	0.9370
0.55	0.8828	0.8402	0.8324	0.9408	0.9262	0.9216	0.9594	0.9625	0.9600	0.9608	0.9715	0.9700
0.60	0.9296	0.8960	0.8894	0.9689	0.9605	0.9573		0.9831	0.9816	0.9810	0.9880	0.9872
0.65	0.9635	0.9361	0.9309		0.9805	0.9785		0.9931	0.9924		0.9955	0.9951
0.70	0.9826	0.9629	0.9591		0.9912	0.9900		0.9975	0.9972		0.9985	0.9984
0.75		0.9797	0.9771		0.9963	0.9957		0.9992	0.9991		0.9996	0.9995
0.80		0.9896	0.9879		0.9986	0.9983		0.9998	0.9997		0.9999	0.9999
0.85		0.9950	0.9940		0.9995	0.9994		0.9999	0.9999			
0.90		0.9977	0.9972		0.9998	0.9998						
0.95		0.9990	0.9988			0.9999						

POWER: GAMMA COVARIATE

	n=500, a=-1.5			n=500, a=-1.0			n=500, a=-0.5			n=500, a=0		
b	simulation	population formula	sample formula	simulation	population formula	sample formula	simulation	population formula	sample formula	simulation	population formula	sample formula
-0.70			0.9999									
-0.65		0.9998	0.9995									
-0.60		0.9992	0.9982			0.9999						
-0.55		0.9969	0.9939		0.9997	0.9993			0.9999			0.9999
-0.50	0.9649	0.9897	0.9822	0.9936	0.9985	0.9967	0.9991	0.9997	0.9992		0.9999	0.9996
-0.45	0.9255	0.9707	0.9552	0.9778	0.9934	0.9878	0.9937	0.9982	0.9960	0.9958	0.9989	0.9974
-0.40	0.8604	0.9288	0.9022	0.9434	0.9764	0.9627	0.9755	0.9909	0.9837	0.9855	0.9938	0.9883
-0.35	0.7622	0.8513	0.8131	0.8740	0.9323	0.9059	0.9366	0.9657	0.9479	0.9531	0.9740	0.9588
-0.30	0.6315	0.7310	0.6859	0.7648	0.8417	0.8019	0.8439	0.8999	0.8670	0.8837	0.9169	0.8865
-0.25	0.4800	0.5749	0.5313	0.6198	0.6947	0.6485	0.7115	0.7708	0.7258	0.7504	0.7959	0.7518
-0.20	0.3325	0.4055	0.3716	0.4335	0.5066	0.4657	0.5115	0.5799	0.5354	0.5508	0.6064	0.5607
-0.15	0.2087	0.2526	0.2318	0.2717	0.3171	0.2902	0.3228	0.3679	0.3364	0.3597	0.3872	0.3540
-0.10	0.1101	0.1385	0.1292	0.1427	0.1675	0.1552	0.1614	0.1911	0.1764	0.1810	0.2004	0.1846
-0.05	0.0636	0.0716	0.0693	0.0702	0.0785	0.0756	0.0779	0.0842	0.0806	0.0789	0.0864	0.0826
0.00	0.0485	0.0500	0.0500	0.0471	0.0500	0.0500	0.0481	0.0500	0.0500	0.0477	0.0500	0.0500
0.05	0.0734	0.0716	0.0693	0.0791	0.0785	0.0755	0.0820	0.0842	0.0806	0.0820	0.0864	0.0826
0.10	0.1384	0.1385	0.1291	0.1559	0.1675	0.1551	0.1809	0.1911	0.1763	0.1896	0.2004	0.1846
0.15	0.2492	0.2526	0.2313	0.3015	0.3171	0.2897	0.3441	0.3679	0.3361	0.3589	0.3872	0.3540
0.20	0.4048	0.4055	0.3704	0.4772	0.5066	0.4647	0.5415	0.5799	0.5348	0.5541	0.6064	0.5607
0.25	0.5699	0.5749	0.5294	0.6714	0.6947	0.6470	0.7371	0.7708	0.7251	0.7418	0.7959	0.7518
0.30	0.7383	0.7310	0.6835	0.8265	0.8417	0.8003	0.8715	0.8999	0.8662	0.8776	0.9169	0.8865
0.35	0.8598	0.8513	0.8106	0.9227	0.9323	0.9045	0.9477	0.9657	0.9474	0.9512	0.9740	0.9588
0.40	0.9263	0.9288	0.9000	0.9704	0.9764	0.9619	0.9840	0.9909	0.9835	0.9845	0.9938	0.9883
0.45	0.9746	0.9707	0.9538	0.9912	0.9934	0.9874	0.9963	0.9982	0.9959	0.9960	0.9989	0.9974
0.50	0.9906	0.9897	0.9813	0.9977	0.9985	0.9966	0.9990	0.9997	0.9992		0.9999	0.9996
0.55		0.9969	0.9934		0.9997	0.9992			0.9999			0.9999
0.60		0.9992	0.9980			0.9999						
0.65		0.9998	0.9995									
0.70			0.9999									