

## Binomial distribution

$$\sum_{x=0}^r b(x:n, p)$$

<i>n</i>	<i>r</i>	<i>p</i>									
		.10	.20	.25	.30	.40	.50	.60	.70	.80	.90
1	0	.9000	.8000	.7500	.7000	.6000	.5000	.4000	.3000	.2000	.1000
	1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	0	.8100	.6400	.5625	.4900	.3600	.2500	.1600	.0900	.0400	.0100
	1	.9900	.9600	.9375	.9100	.8400	.7500	.6400	.5100	.3600	.1900
	2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3	0	.7290	.5120	.4219	.3430	.2160	.1250	.0640	.0270	.0080	.0010
	1	.9720	.8960	.8438	.7840	.6480	.5000	.3520	.2160	.1040	.0280
	2	.9990	.9920	.9844	.9730	.9360	.8750	.7840	.6570	.4880	.2710
	3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4	0	.6561	.4096	.3164	.2401	.1296	.0625	.0256	.0081	.0016	.0001
	1	.9477	.8192	.7383	.6517	.4752	.3125	.1792	.0837	.0272	.0037
	2	.9963	.9728	.9492	.9163	.8208	.6875	.5248	.3483	.1808	.0523
	3	.9999	.9984	.9961	.9919	.9744	.9375	.8704	.7599	.5904	.3439
	4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5	0	.5905	.3277	.2373	.1681	.0778	.0321	.0102	.0024	.0003	.0000
	1	.9185	.7373	.6328	.5282	.3370	.1875	.0870	.0378	.0067	.0005
	2	.9914	.9421	.8965	.8369	.6826	.5000	.3174	.1631	.0579	.0068
	3	.9995	.9933	.9844	.9692	.9130	.8125	.6630	.4718	.2627	.0815
	4	1.0000	.9997	.9990	.9976	.9898	.9688	.9222	.8319	.6723	.4095
	5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6	0	.5314	.2621	.1780	.1176	.0467	.0156	.0041	.0007	.0001	.0000
	1	.8857	.6554	.5339	.4202	.2333	.1094	.0410	.0109	.0016	.0001
	2	.9841	.9011	.8306	.7443	.5443	.3438	.1792	.0705	.0170	.0013
	3	.9987	.9830	.9624	.9295	.8208	.6563	.4557	.2557	.0989	.0158
	4	.9999	.9984	.9954	.9891	.9590	.8906	.7667	.5798	.3447	.1143
	5	1.0000	.9999	.9998	.9993	.9959	.9844	.9533	.8824	.7379	.4686
	6		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
7	0	.4783	.2097	.1335	.0824	.0280	.0078	.0016	.0002	.0000	
	1	.8503	.5767	.4449	.3294	.1586	.0625	.0188	.0038	.0004	.0000
	2	.9743	.8520	.7564	.6471	.4199	.2266	.0963	.0288	.0047	.0002
	3	.9973	.9667	.9294	.8740	.7102	.5000	.2898	.1260	.0333	.0027
	4	.9998	.9953	.9871	.9712	.9037	.7734	.5801	.3529	.1480	.0257
	5	1.0000	.9996	.9987	.9962	.9812	.9375	.8414	.6706	.4233	.1497
	6		1.0000	.9999	.9998	.9984	.9922	.9720	.9176	.7903	.5217
	7			1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

## Binomial distribution

$$\sum_{x=0}^r b(x:n, p)$$

n	r	p									
		.10	.20	.25	.30	.40	.50	.60	.70	.80	.90
8	0	.4305	.1678	.1001	.0576	.0168	.0039	.0007	.0001	.0000	
	1	.8131	.5033	.3671	.2553	.1064	.0352	.0085	.0013	.0001	
	2	.9619	.7969	.6785	.5518	.3154	.1445	.0498	.0113	.0012	.0000
	3	.9950	.9437	.8862	.8059	.5941	.3633	.1737	.0580	.0104	.0004
	4	.9996	.9896	.9727	.9420	.8263	.6367	.4059	.1941	.0563	.0050
	5	1.0000	.9988	.9958	.9887	.9502	.8555	.6846	.4482	.2031	.0381
	6		.9991	.9996	.9987	.9915	.9648	.8936	.7747	.4967	.1869
	7		1.0000	1.0000	.9999	.9993	.9961	.9832	.9242	.8322	.5695
	8				1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
9	0	.3874	.4342	.0751	.0404	.0101	.0020	.0003	.0000		
	1	.7748	.4362	.3003	.1960	.0705	.0195	.0038	.0004	.0000	
	2	.9470	.7382	.6007	.4628	.2318	.0898	.0250	.0043	.0003	.0000
	3	.9917	.9144	.8343	.7297	.4826	.2539	.0994	.0253	.0031	.0001
	4	.9991	.9804	.9511	.9012	.7334	.5000	.2666	.0988	.0196	.0009
	5	.9999	.9969	.9900	.9747	.9006	.7461	.5174	.2703	.0856	.0083
	6	1.0000	.9997	.9987	.9957	.9750	.9102	.7682	.5372	.2618	.0530
	7		1.0000	.9999	.9996	.9962	.9805	.9295	.8040	.5638	.2252
	8			1.0000	1.0000	.9997	.9980	.9899	.9596	.8658	.6126
	9					1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10	0	.3487	.1074	.0563	.0282	.0060	.0010	.0001	.0000		
	1	.7361	.3758	.2440	.1493	.0464	.0107	.0017	.0001	.0000	
	2	.9298	.6778	.5256	.3828	.1673	.0547	.0123	.0016	.0001	
	3	.9872	.8791	.7759	.6496	.3823	.1719	.0548	.0106	.0009	.0000
	4	.9984	.9672	.9219	.8497	.6331	.3770	.1662	.0474	.0064	.0002
	5	.9999	.9936	.9803	.9527	.8338	.6230	.3669	.1503	.0328	.0016
	6	1.0000	.9991	.9965	.9864	.9452	.8281	.6177	.3504	.1209	.0128
	7		.9999	.9996	.9984	.9877	.9453	.8327	.6172	.3222	.0702
	8		1.0000	1.0000	.9999	.9983	.9893	.9536	.8507	.6242	.2639
	9				1.0000	.9999	.9990	.9940	.9718	.8926	.6513
	10					1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
11	0	.3138	.0859	.0422	.0198	.0036	.0005	.0000			
	1	.6974	.3221	.1971	.1130	.0302	.0059	.0007	.0000		
	2	.9104	.6174	.4552	.3127	.1189	.0327	.0059	.0006	.0000	
	3	.9815	.8369	.7133	.5696	.2963	.1133	.0293	.0043	.0002	
	4	.9972	.9496	.8854	.7897	.5328	.2744	.0094	.0216	.0020	.0000

## Binomial distribution

$$\sum_{x=0}^r b(x : n, p)$$

<i>n</i> <i>r</i>		<i>p</i>									
		.10	.20	.25	.30	.40	.50	.60	.70	.80	.90
11	5	.9997	.9883	.9657	.9218	.7535	.5000	.2465	.0782	.0117	.0003
	6	1.0000	.9980	.9924	.9784	.9006	.7256	.4672	.2103	.0504	.0028
	7		.9998	.9988	.9957	.9707	.8867	.7037	.4304	.1611	.0185
	8		1.0000	.9999	.9994	.9941	.9673	.8811	.6873	.3826	.0896
	9			1.0000	1.0000	.9993	.9941	.9698	.8870	.6779	.3026
	10					1.0000	.9995	.9964	.9802	.9141	.6862
	11						1.0000	1.0000	1.0000	1.0000	1.0000
12	0	.2824	.0687	.0317	.0022	.0002	.0000				
	1	.6590	.2749	.1584	.0850	.0196	.0032	.0003	.0000		
	2	.8891	.5583	.3907	.2528	.0834	.0193	.0028	.0002	.0000	
	3	.9744	.7964	.6488	.4925	.2253	.0730	.0153	.0017	.0001	
	4	.9957	.9274	.8424	.7237	.4382	.1938	.0573	.0095	.0006	.0000
	5	.9995	.9806	.9456	.8821	.6652	.3872	.1582	.0386	.0039	.0001
	6	.9999	.9961	.9857	.9614	.8418	.6128	.3348	.1178	.0194	.0005
	7	1.0000	.9994	.9972	.9905	.9427	.8602	.5618	.2763	.0726	.0043
	8		.9999	.9996	.9983	.9847	.9270	.7747	.5075	.2054	.0256
	9		1.0000	1.0000	.9998	.9972	.9807	.9166	.7472	.4417	.1109
	10				1.0000	.9997	.9968	.9804	.9150	.7251	.3410
	11					1.0000	.9998	.9978	.9862	.9313	.7178
	12						1.0000	1.0000	1.0000	1.0000	1.0000
13	0	.2542	.0550	.0238	.0097	.0013	.0001	.0000			
	1	.6213	.2336	.1367	.0637	.0126	.0017	.0001	.0000		
	2	.8661	.5017	.3326	.2025	.0579	.0112	.0013	.0001		
	3	.9658	.7473	.5843	.4206	.1686	.0461	.0078	.0007	.0000	
	4	.9935	.9009	.7940	.6543	.3530	.1334	.0321	.0040	.0002	
	5	.9991	.9700	.9198	.8346	.5744	.2905	.0977	.0182	.0012	.0000
	6	.9999	.9930	.9757	.9376	.7712	.5000	.2288	.0624	.0070	.0001
	7	1.0000	.9980	.9944	.9818	.9023	.7095	.4256	.1654	.0300	.0009
	8		.9998	.9990	.9960	.9679	.8666	.6470	.3457	.0991	.0065
	9		1.0000	.9999	.9993	.9922	.9539	.8314	.5794	.2527	.0342
	10			1.0000	.9999	.9987	.9888	.9421	.7975	.4983	.1339
	11				1.0000	.9999	.9983	.9874	.9363	.7664	.3787
	12					1.0000	.9999	.9987	.9903	.9450	.7458
	13						1.0000	1.0000	1.0000	1.0000	1.0000

## Binomial distribution

$$\sum_{x=0}^r b(x : n, p)$$

<i>n</i> <i>r</i>	<i>p</i>									
	.10	.20	.25	.30	.40	.50	.60	.70	.80	.90
14 0	.2288	.0440	.0178	.0068	.0008	.0001	.0000			
1	.5846	.1976	.1010	.0475	.0081	.0009	.0001			
2	.8416	.4481	.2811	.1608	.0398	.0065	.0006	.0000		
3	.9559	.6982	.5213	.3552	.1243	.0287	.0039	.0002		
4	.9908	.8702	.7415	.5842	.2793	.0898	.0175	.0017	.0000	
5	.9985	.9561	.8883	.7805	.4859	.2120	.0583	.0083	.0004	
6	.9998	.9884	.9617	.9067	.6925	.9353	.1501	.0315	.0024	.0000
7	1.0000	.9976	.9897	.9685	.8499	.6047	.3075	.0933	.0116	.0002
8		.9996	.9978	.9917	.9417	.7880	.5141	.2195	.0439	.0015
9		1.0000	.9997	.9983	.9825	.9102	.7207	.4158	.1298	.0092
10			1.0000	.9998	.9961	.9713	.8757	.6448	.3018	.0441
11				1.0000	.9994	.9935	.9602	.8392	.5519	.1584
12					.9999	.9991	.9991	.9525	.8021	.4154
13					1.0000	.9999	.9992	.9932	.9560	.7712
14						1.0000	1.0000	1.0000	1.0000	1.0000
15 0	.2059	.0352	.0134	.0047	.0005	.0000				
1	.5490	.1671	.0802	.0353	.0052	.0005	.0000			
2	.8159	.3980	.2361	.1268	.0271	.0037	.0003	.0000		
3	.9444	.6482	.4613	.2969	.0905	.0176	.0019	.0001		
4	.9873	.8358	.6865	.5155	.2173	.0592	.0094	.0007	.0000	
5	.9978	.9389	.8516	.7216	.4032	.1509	.0038	.0037	.0001	
6	.9997	.9819	.9343	.8689	.6098	.3036	.0951	.0152	.0008	
7	1.0000	.9958	.9827	.9500	.7869	.5000	.2131	.0500	.0042	.0000
8		.9992	.9958	.9848	.9050	.6964	.3902	.1311	.0181	.0003
9		.9999	.9992	.9963	.9662	.8491	.5968	.2784	.0611	.0023
10		1.0000	.9999	.9993	.9907	.9408	.7827	.4845	.1642	.0127
11			1.0000	.9999	.9981	.9824	.9095	.7031	.3518	.0556
12				1.0000	.9997	.9963	.9729	.8732	.6020	.1841
13					1.0000	.9995	.9948	.9647	.8329	.4510
14						1.0000	.9995	.9953	.9648	.7941
15							1.0000	1.0000	1.0000	1.0000
16 0	.1853	.0281	.0100	.0003	.0000					
1	.5147	.1407	.0635	.0261	.0033	.0003	.0000			
2	.7892	.3518	.1971	.0994	.0183	.0021	0.000			
3	.9316	.5981	.4050	.2459	.0651	.0106	.0009	.0000		
4	.9830	.7982	.6302	.4499	.1666	.0384	.0049	.0003		

# Binomial distribution

$$\sum_{x=0}^r b(x : n, p)$$

n	r	p									
		.10	.20	.25	.30	.40	.50	.60	.70	.80	.90
16	5	.9967	.9183	.8103	.6598	.3288	.1051	.0191	.0016	.0000	
	6	.9995	.9733	.9204	.8247	.5272	.2272	.0583	.0071	.0002	
	7	.9999	.9930	.9729	.9256	.7161	.4018	.1423	.0257	.0015	.0000
	8	1.0000	.9985	.9925	.9743	.8577	.5982	.2839	.0744	.0070	.0001
	9		.9998	.9984	.9929	.9417	.7728	.4728	.1753	.0267	.0005
	10		1.0000	.9997	.9984	.9809	.8949	.6712	.3402	.0817	.0033
	11			1.0000	.9997	.9951	.9616	.8334	.5501	.2018	.0170
	12				1.0000	.9991	.9894	.9349	.7541	.4019	.0684
	13					.9999	.9979	.9817	.9006	.6482	.2108
	14					1.0000	.9997	.9967	.9739	.8593	.4853
	15						1.0000	.9997	.9967	.9719	.8147
	16							1.0000	1.0000	1.0000	1.0000
17	0	.1668	.0225	.0075	.0023	.0002	.0000				
	1	.4818	.1182	.0501	.0193	.0021	.0001	.0000			
	2	.7618	.3096	.1637	.0774	.0123	.0012	.0001			
	3	.9174	.5489	.3530	.2019	.0464	.0064	.0005	.0000		
	4	.9779	.7582	.5739	.3887	.1260	.0245	.0025	.0001		
	5	.9953	.8943	.7653	.5968	.2639	.0717	.0106	.0007	.0000	
	6	.9992	.9623	.8929	.7752	.4478	.1662	.0348	.0032	.0001	
	7	.9999	.9891	.9598	.8957	.6405	.3145	.0919	.0127	.0005	.0008
	8	1.0000	.9974	.9876	.9597	.8011	.5000	.1989	.0403	.0026	.0000
	9		.9995	.9969	.9873	.9081	.6855	.3595	.1046	.0109	.0001
	10		.9999	.9994	.9968	.9652	.8338	.5522	.2248	.0377	.0008
	11		1.0000	.9999	.9993	.9894	.9283	.7361	.4032	.1057	.0047
	12			1.0000	.9999	.9975	.9755	.8740	.6113	.2418	.0221
	13				1.0000	.9995	.9936	.9536	.7981	.4511	.0826
	14					.9999	.9988	.9877	.9226	.6904	.2382
	15					1.0000	.9999	.9979	.9807	.8818	.5182
	16						1.0000	.9998	.9977	.9775	.8332
	17							1.0000	1.0000	1.0000	1.0000
18	0	.1501	.0180	.0056	.0016	.0001	.0000				
	1	.4503	.0991	.0395	.0142	.0013	.0001				
	2	.7338	.2713	.1353	.0600	.0082	.0007	.0000			
	3	.9018	.5010	.3057	.1646	.0328	.0038	.0002			
	4	.9718	.7164	.5787	.3327	.0942	.0154	.0013	.0000		
	5	.9936	.8671	.7175	.5344	.2088	.0481	.0058	.0003		
	6	.9988	.9487	.8610	.7217	.3743	.1189	.0203	.0014	.0000	

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$$\sum_{x=0}^r b(x : n, p)$$

<i>n</i>	<i>r</i>	<i>p</i>									
		.10	.20	.25	.30	.40	.50	.60	.70	.80	.90
18	7	.9998	.9837	.9431	.8593	.5634	.2403	.0576	.0061	.0002	
	8	1.0000	.9957	.9807	.9404	.7368	.4073	.1347	.0210	.0009	
	9		.9991	.9946	.9790	.8653	.5927	.2632	.0596	.0043	.0000
	10		.9998	.9998	.9939	.9424	.7597	.4366	.1407	.0163	.0002
	11		1.0000	.9998	.9986	.9797	.8811	.6257	.2783	.0513	.0012
	12			1.0000	.9997	.9942	.9519	.7912	.4656	.1329	.0064
	13				1.0000	.9987	.9846	.9058	.6673	.2836	.0282
	14					.9998	.9962	.9672	.8354	.4990	.0982
	15					1.0000	.9993	.9918	.9400	.7287	.2662
	16						.9999	.9987	.9858	.9009	.5497
	17						1.0000	.9999	.9984	.9820	.8499
	18							1.0000	1.0000	1.0000	1.0000
19	0	.1351	.0144	.0042	.0011	.0001					
	1	.4203	.0829	.0131	.0104	.0008	.0000				
	2	.7054	.2369	.1113	.0462	.0055	.0004	.0000			
	3	.8850	.4551	.2631	.1332	.0230	.0022	.0001			
	4	.9648	.6733	.4654	.2822	.0696	.0096	.0006	.0000		
	5	.9914	.8369	.6678	.4739	.1629	.0318	.0031	.0001		
	6	.9983	.9324	.8251	.6655	.3081	.0835	.0116	.0006		
	7	.9997	.9767	.9225	.8180	.4878	.1796	.0352	.0028	.0000	
	8	1.0000	.9933	.9713	.9161	.6675	.3238	.0885	.0105	.0003	
	9		.9984	.9911	.9674	.8139	.5000	.1861	.0326	.0016	
	10		.9997	.9977	.9895	.9115	.6762	.3325	.0836	.0067	.0000
	11		.9999	.9995	.9972	.9648	.8204	.5122	.1820	.0233	.0003
	12		1.0000	.9999	.9994	.9884	.9165	.6919	.3345	.0676	.0017
	13			1.0000	.9999	.9969	.9682	.8371	.5261	.1631	.0086
	14				1.0000	.9994	.9904	.9304	.7178	.3267	.0352
	15					.9999	.9978	.9770	.8668	.5449	.1150
	16					1.0000	.9996	.9945	.9538	.7631	.2946
	17						1.0000	.9992	.9896	.9171	.5797
	18							.9999	.9989	.9856	.8649
	19							1.0000	1.0000	1.0000	1.0000

## Binomial distribution

$$\sum_{x=0}^r b(x : n, p)$$

<i>n</i>	<i>r</i>	<i>p</i>									
		.10	.20	.25	.30	.40	.50	.60	.70	.80	.90
20	0	.1216	.0115	.0032	.0008	.0000					
	1	.3917	.0692	.0243	.0076	.0005	.0000				
	2	.6769	.2061	.0913	.0355	.0036	.0002	.0000			
	3	.8670	.4114	.2252	.1071	.0160	.0013	.0001			
	4	.9568	.6296	.4148	.2375	.0510	.0059	.0003			
	5	.9887	.8042	.6172	.4164	.1256	.0207	.0016	.0000		
	6	.9976	.9133	.7858	.6080	.2500	.0577	.0065	.0003		
	7	.9996	.9679	.8982	.7723	.4159	.1316	.0210	.0013	.0000	
	8	.9999	.9900	.9591	.8867	.5956	.2517	.0565	.0051	.0001	
	9	1.0000	.9974	.9861	.9520	.7553	.4119	.1275	.0171	.0006	
	10		.9994	.9961	.9829	.8725	.5881	.2447	.0480	.0026	.0000
	11		.9999	.9991	.9949	.9435	.7483	.4044	.1133	.0100	.0001
	12		1.0000	.9998	.9987	.9790	.8684	.5841	.2277	.0321	.0004
	13			1.0000	.9997	.9935	.9423	.7500	.3920	.0867	.0024
	14				1.0000	.9984	.9793	.8744	.5836	.1958	.0113
	15					.9997	.9941	.9490	.7625	.3704	.0432
	16					1.0000	.9987	.9840	.8929	.5886	.1330
	17						.9998	.9964	.9645	.7939	.3231
	18						1.0000	.9995	.9924	.9308	.6083
	19							1.0000	.9992	.9885	.8784
	20								1.0000	1.0000	1.0000