

# Verteilungsfunktion der Binomialverteilung

$$P(X \leq k) = \sum_{i=0}^k \binom{n}{i} p^i (1-p)^{n-i}$$

		0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50
p	k										
n	k										
1	0	0.9500	0.9000	0.8500	0.8000	0.7500	0.7000	0.6500	0.6000	0.5500	0.5000
1	1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	0	0.9025	0.8100	0.7225	0.6400	0.5625	0.4900	0.4225	0.3600	0.3025	0.2500
2	1	0.9975	0.9900	0.9775	0.9600	0.9375	0.9100	0.8775	0.8400	0.7975	0.7500
2	2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3	0	0.8574	0.7290	0.6141	0.5120	0.4219	0.3430	0.2746	0.2160	0.1664	0.1250
3	1	0.9928	0.9720	0.9393	0.8960	0.8438	0.7840	0.7183	0.6480	0.5748	0.5000
3	2	0.9999	0.9990	0.9966	0.9920	0.9844	0.9730	0.9571	0.9360	0.9089	0.8750
3	3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4	0	0.8145	0.6561	0.5220	0.4096	0.3164	0.2401	0.1785	0.1296	0.0915	0.0625
4	1	0.9860	0.9477	0.8905	0.8192	0.7383	0.6517	0.5630	0.4752	0.3910	0.3125
4	2	0.9995	0.9963	0.9880	0.9728	0.9492	0.9163	0.8735	0.8208	0.7585	0.6875
4	3	1.0000	0.9999	0.9995	0.9984	0.9961	0.9919	0.9850	0.9744	0.9590	0.9375
4	4		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5	0	0.7738	0.5905	0.4437	0.3277	0.2373	0.1681	0.1160	0.0778	0.0503	0.0313
5	1	0.9774	0.9185	0.8352	0.7373	0.6328	0.5282	0.4284	0.3370	0.2562	0.1875
5	2	0.9988	0.9914	0.9734	0.9421	0.8965	0.8369	0.7648	0.6826	0.5931	0.5000
5	3	1.0000	0.9995	0.9978	0.9933	0.9844	0.9692	0.9460	0.9130	0.8688	0.8125
5	4		1.0000	0.9999	0.9997	0.9990	0.9976	0.9947	0.9898	0.9815	0.9688
5	5			1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6	0	0.7351	0.5314	0.3771	0.2621	0.1780	0.1176	0.0754	0.0467	0.0277	0.0156
6	1	0.9672	0.8857	0.7765	0.6554	0.5339	0.4202	0.3191	0.2333	0.1636	0.1094
6	2	0.9978	0.9842	0.9527	0.9011	0.8306	0.7443	0.6471	0.5443	0.4415	0.3438
6	3	0.9999	0.9987	0.9941	0.9830	0.9624	0.9295	0.8826	0.8208	0.7447	0.6563
6	4	1.0000	0.9999	0.9996	0.9984	0.9954	0.9891	0.9777	0.9590	0.9308	0.8906
6	5		1.0000	1.0000	0.9999	0.9998	0.9993	0.9982	0.9959	0.9917	0.9844
6	6			1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
7	0	0.6983	0.4783	0.3206	0.2097	0.1335	0.0824	0.0490	0.0280	0.0152	0.0078
7	1	0.9556	0.8503	0.7166	0.5767	0.4449	0.3294	0.2338	0.1586	0.1024	0.0625
7	2	0.9962	0.9743	0.9262	0.8520	0.7564	0.6471	0.5323	0.4199	0.3164	0.2266
7	3	0.9998	0.9973	0.9879	0.9667	0.9294	0.8740	0.8002	0.7102	0.6083	0.5000
7	4	1.0000	0.9998	0.9988	0.9953	0.9871	0.9712	0.9444	0.9037	0.8471	0.7734
7	5		1.0000	0.9999	0.9996	0.9987	0.9962	0.9910	0.9812	0.9643	0.9375
7	6			1.0000	1.0000	0.9999	0.9998	0.9994	0.9984	0.9963	0.9922
7	7				1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
8	0	0.6634	0.4305	0.2725	0.1678	0.1001	0.0576	0.0319	0.0168	0.0084	0.0039
8	1	0.9428	0.8131	0.6572	0.5033	0.3671	0.2553	0.1691	0.1064	0.0632	0.0352
8	2	0.9942	0.9619	0.8948	0.7969	0.6785	0.5518	0.4278	0.3154	0.2201	0.1445
8	3	0.9996	0.9950	0.9786	0.9437	0.8862	0.8059	0.7064	0.5941	0.4770	0.3633
8	4	1.0000	0.9996	0.9971	0.9896	0.9727	0.9420	0.8939	0.8263	0.7396	0.6367
8	5		1.0000	0.9998	0.9988	0.9958	0.9887	0.9747	0.9502	0.9115	0.8555
8	6			1.0000	0.9999	0.9996	0.9987	0.9964	0.9915	0.9819	0.9648
8	7				1.0000	1.0000	0.9999	0.9998	0.9993	0.9983	0.9961
8	8					1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
9	0	0.6302	0.3874	0.2316	0.1342	0.0751	0.0404	0.0207	0.0101	0.0046	0.0020
9	1	0.9288	0.7748	0.5995	0.4362	0.3003	0.1960	0.1211	0.0705	0.0385	0.0195
9	2	0.9916	0.9470	0.8591	0.7382	0.6007	0.4628	0.3373	0.2318	0.1495	0.0898
9	3	0.9994	0.9917	0.9661	0.9144	0.8343	0.7297	0.6089	0.4826	0.3614	0.2539
9	4	1.0000	0.9991	0.9944	0.9804	0.9511	0.9012	0.8283	0.7334	0.6214	0.5000
9	5		0.9999	0.9994	0.9969	0.9900	0.9747	0.9464	0.9006	0.8342	0.7461
9	6		1.0000	1.0000	0.9997	0.9987	0.9957	0.9888	0.9750	0.9502	0.9102
9	7				1.0000	0.9999	0.9996	0.9986	0.9962	0.9909	0.9805
9	8					1.0000	1.0000	0.9999	0.9997	0.9992	0.9980
9	9						1.0000	1.0000	1.0000	1.0000	1.0000
10	0	0.5987	0.3487	0.1969	0.1074	0.0563	0.0282	0.0135	0.0060	0.0025	0.0010
10	1	0.9139	0.7361	0.5443	0.3758	0.2440	0.1493	0.0860	0.0464	0.0233	0.0107
10	2	0.9885	0.9298	0.8202	0.6778	0.5256	0.3828	0.2616	0.1673	0.0996	0.0547
10	3	0.9990	0.9872	0.9500	0.8791	0.7759	0.6496	0.5138	0.3823	0.2660	0.1719
10	4	0.9999	0.9984	0.9901	0.9672	0.9219	0.8497	0.7515	0.6331	0.5044	0.3770
10	5	1.0000	0.9999	0.9986	0.9936	0.9803	0.9527	0.9051	0.8338	0.7384	0.6230
10	6		1.0000	0.9999	0.9991	0.9965	0.9894	0.9740	0.9452	0.8980	0.8281
10	7			1.0000	0.9999	0.9996	0.9984	0.9952	0.9877	0.9726	0.9453
10	8				1.0000	1.0000	0.9999	0.9995	0.9983	0.9955	0.9893
10	9						1.0000	1.0000	0.9999	0.9997	0.9990
10	10								1.0000	1.0000	1.0000

$p$		0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50
$n$	$k$										
11	0	0.5688	0.3138	0.1673	0.0859	0.0422	0.0198	0.0088	0.0036	0.0014	0.0005
	1	0.8981	0.6974	0.4922	0.3221	0.1971	0.1130	0.0606	0.0302	0.0139	0.0059
	2	0.9848	0.9104	0.7788	0.6174	0.4552	0.3127	0.2001	0.1189	0.0652	0.0327
	3	0.9984	0.9815	0.9306	0.8389	0.7133	0.5696	0.4256	0.2963	0.1911	0.1133
	4	0.9999	0.9972	0.9841	0.9496	0.8854	0.7897	0.6683	0.5328	0.3971	0.2744
	5	1.0000	0.9997	0.9973	0.9883	0.9657	0.9218	0.8513	0.7535	0.6331	0.5000
	6		1.0000	0.9997	0.9980	0.9924	0.9784	0.9499	0.9006	0.8262	0.7256
	7			1.0000	0.9998	0.9988	0.9957	0.9878	0.9707	0.9390	0.8867
	8				1.0000	0.9999	0.9994	0.9980	0.9941	0.9852	0.9673
	9					1.0000	1.0000	0.9998	0.9993	0.9978	0.9941
	10							1.0000	1.0000	0.9998	0.9995
11									1.0000	1.0000	
12	0	0.5404	0.2824	0.1422	0.0687	0.0317	0.0138	0.0057	0.0022	0.0008	0.0002
	1	0.8816	0.6590	0.4435	0.2749	0.1584	0.0850	0.0424	0.0196	0.0083	0.0032
	2	0.9804	0.8891	0.7358	0.5583	0.3907	0.2528	0.1513	0.0834	0.0421	0.0193
	3	0.9978	0.9744	0.9078	0.7946	0.6488	0.4925	0.3467	0.2253	0.1345	0.0730
	4	0.9998	0.9957	0.9761	0.9274	0.8424	0.7237	0.5833	0.4382	0.3044	0.1938
	5	1.0000	0.9995	0.9954	0.9806	0.9456	0.8822	0.7873	0.6652	0.5269	0.3872
	6		0.9999	0.9993	0.9961	0.9857	0.9614	0.9154	0.8418	0.7393	0.6128
	7		1.0000	0.9999	0.9994	0.9972	0.9905	0.9745	0.9427	0.8883	0.8062
	8			1.0000	0.9999	0.9996	0.9983	0.9944	0.9847	0.9644	0.9270
	9				1.0000	1.0000	0.9998	0.9992	0.9972	0.9921	0.9807
	10						1.0000	0.9999	0.9997	0.9989	0.9968
	11							1.0000	1.0000	0.9999	0.9998
12									1.0000	1.0000	
13	0	0.5133	0.2542	0.1209	0.0550	0.0238	0.0097	0.0037	0.0013	0.0004	0.0001
	1	0.8646	0.6213	0.3983	0.2336	0.1267	0.0637	0.0296	0.0126	0.0049	0.0017
	2	0.9755	0.8661	0.6920	0.5017	0.3326	0.2025	0.1132	0.0579	0.0269	0.0112
	3	0.9969	0.9658	0.8820	0.7473	0.5843	0.4206	0.2783	0.1686	0.0929	0.0461
	4	0.9997	0.9935	0.9658	0.9009	0.7940	0.6543	0.5005	0.3530	0.2279	0.1334
	5	1.0000	0.9991	0.9925	0.9700	0.9198	0.8346	0.7159	0.5744	0.4268	0.2905
	6		0.9999	0.9987	0.9930	0.9757	0.9376	0.8705	0.7712	0.6437	0.5000
	7		1.0000	0.9998	0.9988	0.9944	0.9818	0.9538	0.9023	0.8212	0.7095
	8			1.0000	0.9998	0.9990	0.9960	0.9874	0.9679	0.9302	0.8666
	9				1.0000	0.9999	0.9993	0.9975	0.9922	0.9797	0.9539
	10					1.0000	0.9999	0.9997	0.9987	0.9959	0.9888
	11						1.0000	1.0000	0.9999	0.9995	0.9983
	12								1.0000	1.0000	0.9999
13									1.0000	1.0000	
14	0	0.4877	0.2288	0.1028	0.0440	0.0178	0.0068	0.0024	0.0008	0.0002	0.0001
	1	0.8470	0.5846	0.3567	0.1979	0.1010	0.0475	0.0205	0.0081	0.0029	0.0009
	2	0.9699	0.8416	0.6479	0.4481	0.2811	0.1608	0.0839	0.0398	0.0170	0.0065
	3	0.9958	0.9559	0.8535	0.6982	0.5213	0.3552	0.2205	0.1243	0.0632	0.0287
	4	0.9996	0.9908	0.9533	0.8702	0.7415	0.5842	0.4227	0.2793	0.1672	0.0898
	5	1.0000	0.9985	0.9885	0.9561	0.8883	0.7805	0.6405	0.4859	0.3373	0.2120
	6		0.9998	0.9978	0.9884	0.9617	0.9067	0.8164	0.6925	0.5461	0.3953
	7		1.0000	0.9997	0.9976	0.9897	0.9685	0.9247	0.8499	0.7414	0.6047
	8			1.0000	0.9996	0.9978	0.9917	0.9757	0.9417	0.8811	0.7880
	9				1.0000	0.9997	0.9983	0.9940	0.9825	0.9574	0.9102
	10					1.0000	0.9998	0.9989	0.9961	0.9886	0.9713
	11						1.0000	0.9999	0.9994	0.9978	0.9935
	12							1.0000	0.9999	0.9997	0.9991
	13								1.0000	1.0000	0.9999
14									1.0000	1.0000	
15	0	0.4633	0.2059	0.0874	0.0352	0.0134	0.0047	0.0016	0.0005	0.0001	0.0000
	1	0.8290	0.5490	0.3186	0.1671	0.0802	0.0353	0.0142	0.0052	0.0017	0.0005
	2	0.9638	0.8159	0.6042	0.3980	0.2361	0.1268	0.0617	0.0271	0.0107	0.0037
	3	0.9945	0.9444	0.8227	0.6482	0.4613	0.2969	0.1727	0.0905	0.0424	0.0176
	4	0.9994	0.9873	0.9383	0.8358	0.6865	0.5155	0.3519	0.2173	0.1204	0.0592
	5	0.9999	0.9978	0.9832	0.9389	0.8516	0.7216	0.5643	0.4032	0.2608	0.1509
	6	1.0000	0.9997	0.9964	0.9819	0.9434	0.8689	0.7548	0.6098	0.4522	0.3036
	7		1.0000	0.9994	0.9958	0.9827	0.9500	0.8868	0.7869	0.6535	0.5000
	8			0.9999	0.9992	0.9958	0.9848	0.9578	0.9050	0.8182	0.6964
	9			1.0000	0.9999	0.9992	0.9963	0.9876	0.9662	0.9231	0.8491
	10				1.0000	0.9999	0.9993	0.9972	0.9907	0.9745	0.9408
	11					1.0000	0.9999	0.9995	0.9981	0.9937	0.9824
	12						1.0000	0.9999	0.9997	0.9989	0.9963
	13							1.0000	1.0000	0.9999	0.9995
14									1.0000	1.0000	









$p$		0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50
$n$	$k$										
29	0	0.2259	0.0471	0.0090	0.0015	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000
	1	0.5708	0.1989	0.0549	0.0128	0.0025	0.0004	0.0001	0.0000	0.0000	0.0000
	2	0.8249	0.4350	0.1684	0.0520	0.0133	0.0028	0.0005	0.0001	0.0000	0.0000
	3	0.9452	0.6710	0.3487	0.1404	0.0455	0.0121	0.0026	0.0005	0.0001	0.0000
	4	0.9864	0.8416	0.5555	0.2839	0.1153	0.0379	0.0101	0.0022	0.0004	0.0001
	5	0.9973	0.9363	0.7379	0.4634	0.2317	0.0932	0.0303	0.0080	0.0017	0.0003
	6	0.9995	0.9784	0.8667	0.6429	0.3868	0.1880	0.0738	0.0233	0.0059	0.0012
	7	0.9999	0.9938	0.9414	0.7903	0.5568	0.3214	0.1507	0.0570	0.0172	0.0041
	8	1.0000	0.9984	0.9777	0.8916	0.7125	0.4787	0.2645	0.1187	0.0427	0.0121
	9		0.9997	0.9926	0.9507	0.8337	0.6360	0.4076	0.2147	0.0913	0.0307
	10		0.9999	0.9978	0.9803	0.9145	0.7708	0.5617	0.3427	0.1708	0.0680
	11		1.0000	0.9995	0.9931	0.9610	0.8706	0.7050	0.4900	0.2833	0.1325
	12			0.9999	0.9978	0.9842	0.9348	0.8207	0.6374	0.4213	0.2291
	13			1.0000	0.9994	0.9944	0.9707	0.9022	0.7659	0.5689	0.3555
	14				0.9999	0.9982	0.9883	0.9524	0.8638	0.7070	0.5000
	15				1.0000	0.9995	0.9959	0.9794	0.9290	0.8199	0.6445
	16					0.9999	0.9987	0.9921	0.9671	0.9008	0.7709
	17					1.0000	0.9997	0.9973	0.9865	0.9514	0.8675
	18						0.9999	0.9992	0.9951	0.9790	0.9320
	19						1.0000	0.9998	0.9985	0.9920	0.9693
	20							1.0000	0.9996	0.9974	0.9879
	21								0.9999	0.9993	0.9959
	22								1.0000	0.9998	0.9988
	23									1.0000	0.9997
	24										0.9999
25										1.0000	
30	0	0.2146	0.0424	0.0076	0.0012	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000
	1	0.5535	0.1837	0.0480	0.0105	0.0020	0.0003	0.0000	0.0000	0.0000	0.0000
	2	0.8122	0.4114	0.1514	0.0442	0.0106	0.0021	0.0003	0.0000	0.0000	0.0000
	3	0.9392	0.6474	0.3217	0.1227	0.0374	0.0093	0.0019	0.0003	0.0000	0.0000
	4	0.9844	0.8245	0.5245	0.2552	0.0979	0.0302	0.0075	0.0015	0.0002	0.0000
	5	0.9967	0.9268	0.7106	0.4275	0.2026	0.0766	0.0233	0.0057	0.0011	0.0002
	6	0.9994	0.9742	0.8474	0.6070	0.3481	0.1595	0.0586	0.0172	0.0040	0.0007
	7	0.9999	0.9922	0.9302	0.7608	0.5143	0.2814	0.1238	0.0435	0.0121	0.0026
	8	1.0000	0.9980	0.9722	0.8713	0.6736	0.4315	0.2247	0.0940	0.0312	0.0081
	9		0.9995	0.9903	0.9389	0.8034	0.5888	0.3575	0.1763	0.0694	0.0214
	10		0.9999	0.9971	0.9744	0.8943	0.7304	0.5078	0.2915	0.1350	0.0494
	11		1.0000	0.9992	0.9905	0.9493	0.8407	0.6548	0.4311	0.2327	0.1002
	12			0.9998	0.9969	0.9784	0.9155	0.7802	0.5785	0.3592	0.1808
	13			1.0000	0.9991	0.9918	0.9599	0.8737	0.7145	0.5025	0.2923
	14				0.9998	0.9973	0.9831	0.9348	0.8246	0.6448	0.4278
	15				0.9999	0.9992	0.9936	0.9699	0.9029	0.7691	0.5722
	16				1.0000	0.9998	0.9979	0.9876	0.9519	0.8644	0.7077
	17					0.9999	0.9994	0.9955	0.9788	0.9286	0.8192
	18					1.0000	0.9998	0.9986	0.9917	0.9666	0.8998
	19						1.0000	0.9996	0.9971	0.9862	0.9506
	20							0.9999	0.9991	0.9950	0.9786
	21							1.0000	0.9998	0.9984	0.9919
	22								1.0000	0.9996	0.9974
	23									0.9999	0.9993
	24									1.0000	0.9998
25										1.0000	

**Hinweis:** Für  $p > 0.5$  erhält man die Werte der Verteilungsfunktion aus der Beziehung  $F_{n,p}(k) = 1 - F_{n,1-p}(n-k-1)$ , wobei  $F_{n,p}$  die Verteilungsfunktion der  $B(n, p)$ -Verteilung bezeichnet.