



UNIVERSIDAD PRIVADA DEL NORTE
FORMAMOS LÍDERES CON RESPONSABILIDAD SOCIAL

DISTRIBUCIÓN BINOMIAL - Términos Acumulativos
"Probabilidad de menos de x éxitos en n intentos"

$$P[X \leq x] = \sum_{x=0}^n \binom{n}{x} p^x (1-p)^{n-x}$$

n	x	p																		
		0.01	0.02	0.04	0.05	0.06	0.08	0.1	0.12	0.14	0.15	0.16	0.18	0.2	0.24	0.25	0.3	0.4	0.45	0.5
2	0	0.9801	0.9604	0.9216	0.9025	0.8836	0.8464	0.8100	0.7744	0.7396	0.7225	0.7056	0.6724	0.6400	0.5776	0.5625	0.4900	0.3600	0.3025	0.2500
	1	0.9999	0.9996	0.9984	0.9975	0.9964	0.9936	0.9900	0.9856	0.9804	0.9775	0.9744	0.9676	0.9600	0.9424	0.9375	0.9100	0.8400	0.7975	0.7500
	2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3	0	0.9703	0.9412	0.8847	0.8574	0.8366	0.7787	0.7290	0.6815	0.6361	0.6141	0.5927	0.5514	0.5120	0.4390	0.4219	0.3430	0.2160	0.1664	0.1250
	1	0.9997	0.9988	0.9953	0.9928	0.9896	0.9818	0.9720	0.9603	0.9467	0.9393	0.9314	0.9145	0.8960	0.8548	0.8438	0.7840	0.6480	0.5748	0.5000
	2	1.0000	1.0000	0.9999	0.9998	0.9998	0.9995	0.9990	0.9983	0.9973	0.9966	0.9959	0.9942	0.9920	0.9862	0.9844	0.9730	0.9360	0.9089	0.8750
4	0	0.9606	0.9224	0.8493	0.8145	0.7867	0.7164	0.6561	0.5997	0.5470	0.5220	0.4975	0.4521	0.4096	0.3336	0.3164	0.2401	0.1296	0.0915	0.0625
	1	0.9994	0.9977	0.9909	0.9860	0.9801	0.9656	0.9477	0.9268	0.9032	0.8905	0.8772	0.8491	0.8192	0.7550	0.7383	0.6517	0.4752	0.3910	0.3125
	2	1.0000	1.0000	0.9998	0.9995	0.9992	0.9981	0.9963	0.9937	0.9902	0.9880	0.9856	0.9798	0.9728	0.9547	0.9492	0.9163	0.8208	0.7585	0.6875
5	0	0.9510	0.9039	0.8154	0.7738	0.7339	0.6591	0.5905	0.5277	0.4704	0.4437	0.4182	0.3707	0.3277	0.2536	0.2373	0.1681	0.0778	0.0503	0.0313
	1	0.9990	0.9962	0.9852	0.9774	0.9681	0.9456	0.9185	0.8875	0.8533	0.8352	0.8165	0.7776	0.7373	0.6539	0.6328	0.5282	0.3370	0.2562	0.1875
	2	1.0000	0.9999	0.9994	0.9988	0.9980	0.9955	0.9914	0.9857	0.9780	0.9734	0.9682	0.9563	0.9421	0.9067	0.8965	0.8369	0.6826	0.5931	0.5000
6	0	0.9415	0.8858	0.7828	0.7351	0.6959	0.6064	0.5314	0.4644	0.4046	0.3771	0.3513	0.3040	0.2621	0.1927	0.1780	0.1176	0.0467	0.0277	0.0156
	1	0.9985	0.9943	0.9784	0.9672	0.9541	0.9227	0.8857	0.8444	0.7997	0.7705	0.7528	0.7044	0.6554	0.5578	0.5339	0.4202	0.2333	0.1636	0.1094
	2	1.0000	0.9998	0.9988	0.9978	0.9962	0.9915	0.9842	0.9739	0.9605	0.9527	0.9440	0.9241	0.9011	0.8461	0.8306	0.7443	0.5443	0.4415	0.3438
7	0	0.9321	0.8681	0.7514	0.6983	0.6485	0.5578	0.4783	0.4087	0.3479	0.3206	0.2951	0.2493	0.2097	0.1465	0.1335	0.0824	0.0280	0.0152	0.0078
	1	0.9980	0.9921	0.9706	0.9556	0.9382	0.8974	0.8503	0.7988	0.7444	0.7166	0.6885	0.6323	0.5767	0.4702	0.4449	0.3294	0.1586	0.1024	0.0625
	2	1.0000	0.9997	0.9980	0.9962	0.9937	0.9860	0.9743	0.9584	0.9389	0.9262	0.9134	0.8846	0.8520	0.7766	0.7564	0.6471	0.4199	0.3164	0.2266
8	0	0.9227	0.8508	0.7214	0.6634	0.6096	0.5132	0.4305	0.3596	0.2992	0.2725	0.2479	0.2044	0.1678	0.1113	0.1001	0.0576	0.0168	0.0084	0.0039
	1	0.9973	0.9897	0.9619	0.9428	0.9208	0.8702	0.8131	0.7520	0.6889	0.6572	0.6326	0.5634	0.5033	0.3925	0.3671	0.2553	0.1064	0.0632	0.0352
	2	0.9999	0.9996	0.9969	0.9942	0.9904	0.9789	0.9619	0.9392	0.9109	0.8948	0.8774	0.8392	0.7969	0.7035	0.6785	0.5518	0.3154	0.2201	0.1445
9	0	0.9135	0.8337	0.6925	0.6302	0.5730	0.4722	0.3874	0.3165	0.2573	0.2316	0.2082	0.1676	0.1342	0.0846	0.0751	0.0404	0.0101	0.0046	0.0020
	1	0.9966	0.9869	0.9522	0.9288	0.9022	0.8417	0.7748	0.7049	0.6343	0.5995	0.5652	0.4988	0.4362	0.3250	0.3003	0.1960	0.0705	0.0385	0.0195
	2	0.9999	0.9994	0.9955	0.9916	0.9862	0.9702	0.9470	0.9167	0.8798	0.8591	0.8371	0.7895	0.7382	0.6287	0.6007	0.4628	0.2318	0.1495	0.0898
10	0	0.9044	0.8171	0.6648	0.5987	0.5386	0.4344	0.3487	0.2785	0.2213	0.1969	0.1748	0.1374	0.1074	0.0643	0.0563	0.0262	0.0060	0.0025	0.0010
	1	0.9957	0.9838	0.9418	0.9139	0.8824	0.8121	0.7361	0.6563	0.5816	0.5443	0.5090	0.4392	0.3738	0.2673	0.2440	0.1493	0.0464	0.0233	0.0107
	2	0.9999	0.9991	0.9938	0.9885	0.9812	0.9599	0.9298	0.8913	0.8455	0.8202	0.7936	0.7372	0.6778	0.5558	0.5256	0.3828	0.1673	0.0998	0.0547
11	0	0.8953	0.8007	0.6382	0.5688	0.5063	0.3996	0.3138	0.2451	0.1903	0.1673	0.1469	0.1127	0.0859	0.0489	0.0422	0.0198	0.0036	0.0014	0.0005
	1	0.9948	0.9805	0.9308	0.8981	0.8618	0.7819	0.6974	0.6127	0.5311	0.4922	0.4547	0.3848	0.3221	0.2186	0.1971	0.1130	0.0302	0.0139	0.0059
	2	0.9998	0.9988	0.9917	0.9848	0.9752	0.9481	0.9104	0.8634	0.8085	0.7788	0.7479	0.6836	0.6174	0.4866	0.4552	0.3127	0.1189	0.0652	0.0327
12	0	0.8861	0.7844	0.6148	0.5414	0.4761	0.3664	0.2787	0.2075	0.1553	0.1343	0.1154	0.0823	0.0564	0.0343	0.0306	0.0143	0.0031	0.0012	0.0004
	1	0.9937	0.9794	0.9297	0.8970	0.8596	0.7797	0.6952	0.6105	0.5289	0.4899	0.4524	0.3825	0.3198	0.2173	0.1958	0.1081	0.0253	0.0076	0.0034
	2	0.9997	0.9987	0.9916	0.9847	0.9751	0.9479	0.9103	0.8633	0.8084	0.7787	0.7478	0.6835	0.6177	0.4870	0.4557	0.3132	0.1195	0.0657	0.0332
13	0	0.8770	0.7693	0.5936	0.5172	0.4589	0.3453	0.2556	0.1825	0.1325	0.1127	0.0948	0.0628	0.0379	0.0258	0.0231	0.0117	0.0029	0.0011	0.0004
	1	0.9926	0.9783	0.9286	0.8959	0.8570	0.7771	0.6926	0.6079	0.5263	0.4873	0.4500	0.3801	0.3174	0.2149	0.1934	0.1081	0.0255	0.0078	0.0036
	2	0.9996	0.9986	0.9915	0.9846	0.9750	0.9478	0.9102	0.8632	0.8083	0.7786	0.7477	0.6834	0.6179	0.4872	0.4559	0.3133	0.1198	0.0660	0.0335
14	0	0.8680	0.7543	0.5746	0.4952	0.4429	0.3273	0.2356	0.1605	0.1127	0.0938	0.0769	0.0459	0.0210	0.0080	0.0030	0.0015	0.0006	0.0003	0.0001
	1	0.9913	0.9770	0.9273	0.8946	0.8570	0.7771	0.6926	0.6079	0.5263	0.4873	0.4500	0.3801	0.3174	0.2149	0.1934	0.1081	0.0255	0.0078	0.0036
	2	0.9995	0.9985	0.9914	0.9845	0.9749	0.9477	0.9101	0.8631	0.8082	0.7785	0.7476	0.6833	0.6179	0.4871	0.4558	0.3134	0.1199	0.0661	0.0336
15	0	0.8590	0.7403	0.5576	0.4742	0.4279	0.3103	0.2176	0.1405	0.0948	0.0769	0.0600	0.0390	0.0141	0.0030	0.0013	0.0009	0.0004	0.0001	0.0000
	1	0.9899	0.9756	0.9259	0.8932	0.8569	0.7770	0.6925	0.6078	0.5262	0.4872	0.4500	0.3801	0.3174	0.2149	0.1934	0.1081	0.0255	0.0078	0.0036
	2	0.9994	0.9984	0.9913	0.9844	0.9748	0.9476	0.9100	0.8630	0.8081	0.7784	0.7475	0.6832	0.6179	0.4873	0.4559	0.3135	0.1200	0.0663	0.0338
16	0	0.8500	0.7273	0.5416	0.4542	0.4139	0.2953	0.2026	0.1255	0.0808	0.0629	0.0460	0.0250	0.0091	0.0030	0.0014	0.0009	0.0004	0.0001	0.0000
	1	0.9887	0.9744	0.9247	0.8920	0.8557	0.7758	0.6913	0.6066	0.5250	0.4860	0.4487	0.3788	0.3161	0.2136	0.1921	0.1081	0.0255	0.0078	0.0036
	2	0.9993	0.9983	0.9912	0.9843	0.9747	0.9475	0.9100	0.8630	0.8081	0.7784	0.7475	0.6832	0.6179	0.4873	0.4559	0.3136	0.1201	0.0665	0.0340
17	0	0.8410	0.7143	0.5256	0.4342	0.3989	0.2793	0.1866	0.1095	0.0648	0.0469	0.0300	0.0190	0.0031	0.0014	0.0007	0.0005	0.0002	0.0000	0.0000
	1	0.9874	0.9731	0.9234	0.8907	0.8544	0.7745	0.6899	0.6052	0.5236	0.4846	0.4473	0.3774	0.3147	0.2122	0.1907				