Standard Normal Distribution for $P(0 \leq Z \leq z)$.

z	+0.00	+0.01	+0.02	+0.03	+0.04	+0.05	+0.06	+0.07	+0.08	+0.09
0.0	0.00000	0.00399	0.00798	0.01197	0.01595	0.01994	0.02392	0.02790	0.03188	0.03586
0.1	0.03983	0.04380	0.04776	0.05172	0.05567	0.05962	0.06356	0.06749	0.07142	0.07535
0.2	0.07926	0.08317	0.08706	0.09095	0.09483	0.09871	0.10257	0.10642	0.11026	0.11409
0.3	0.11791	0.12172	0.12552	0.12930	0.13307	0.13683	0.14058	0.14431	0.14803	0.15173
0.4	0.15542	0.15910	0.16276	0.16640	0.17003	0.17364	0.17724	0.18082	0.18439	0.18793
0.5	0.19146	0.19497	0.19847	0.20194	0.20540	0.20884	0.21226	0.21566	0.21904	0.22240
0.6	0.22575	0.22907	0.23237	0.23565	0.23891	0.24215	0.24537	0.24857	0.25175	0.25490
0.7	0.25804	0.26115	0.26424	0.26730	0.27035	0.27337	0.27637	0.27935	0.28230	0.28524
0.8	0.28814	0.29103	0.29389	0.29673	0.29955	0.30234	0.30511	0.30785	0.31057	0.31327
0.9	0.31594	0.31859	0.32121	0.32381	0.32639	0.32894	0.33147	0.33398	0.33646	0.33891
1.0	0.34134	0.34375	0.34614	0.34849	0.35083	0.35314	0.35543	0.35769	0.35993	0.36214
1.1	0.36433	0.36650	0.36864	0.37076	0.37286	0.37493	0.37698	0.37900	0.38100	0.38298
1.2	0.38493	0.38686	0.38877	0.39065	0.39251	0.39435	0.39617	0.39796	0.39973	0.40147
1.3	0.40320	0.40490	0.40658	0.40824	0.40988	0.41149	0.41308	0.41466	0.41621	0.41774
1.4	0.41924	0.42073	0.42220	0.42364	0.42507	0.42647	0.42785	0.42922	0.43056	0.43189
1.5	0.43319	0.43448	0.43574	0.43699	0.43822	0.43943	0.44062	0.44179	0.44295	0.44408
1.6	0.44520	0.44630	0.44738	0.44845	0.44950	0.45053	0.45154	0.45254	0.45352	0.45449
1.7	0.45543	0.45637	0.45728	0.45818	0.45907	0.45994	0.46080	0.46164	0.46246	0.46327
1.8	0.46407	0.46485	0.46562	0.46638	0.46712	0.46784	0.46856	0.46926	0.46995	0.47062
1.9	0.47128	0.47193	0.47257	0.47320	0.47381	0.47441	0.47500	0.47558	0.47615	0.47670
2.0	0.47725	0.47778	0.47831	0.47882	0.47932	0.47982	0.48030	0.48077	0.48124	0.48169
2.1	0.48214	0.48257	0.48300	0.48341	0.48382	0.48422	0.48461	0.48500	0.48537	0.48574
2.2	0.48610	0.48645	0.48679	0.48713	0.48745	0.48778	0.48809	0.48840	0.48870	0.48899
2.3	0.48928	0.48956	0.48983	0.49010	0.49036	0.49061	0.49086	0.49111	0.49134	0.49158
2.4	0.49180	0.49202	0.49224	0.49245	0.49266	0.49286	0.49305	0.49324	0.49343	0.49361
2.5	0.49379	0.49396	0.49413	0.49430	0.49446	0.49461	0.49477	0.49492	0.49506	0.49520
2.6	0.49534	0.49547	0.49560	0.49573	0.49585	0.49598	0.49609	0.49621	0.49632	0.49643
2.7	0.49653	0.49664	0.49674	0.49683	0.49693	0.49702	0.49711	0.49720	0.49728	0.49736
2.8	0.49744	0.49752	0.49760	0.49767	0.49774	0.49781	0.49788	0.49795	0.49801	0.49807
2.9	0.49813	0.49819	0.49825	0.49831	0.49836	0.49841	0.49846	0.49851	0.49856	0.49861
3.0	0.49865	0.49869	0.49874	0.49878	0.49882	0.49886	0.49889	0.49893	0.49896	0.49900
3.1	0.49903	0.49906	0.49910	0.49913	0.49916	0.49918	0.49921	0.49924	0.49926	0.49929
3.2	0.49931	0.49934	0.49936	0.49938	0.49940	0.49942	0.49944	0.49946	0.49948	0.49950
3.3	0.49952	0.49953	0.49955	0.49957	0.49958	0.49960	0.49961	0.49962	0.49964	0.49965
3.4	0.49966	0.49968	0.49969	0.49970	0.49971	0.49972	0.49973	0.49974	0.49975	0.49976
3.5	0.49977	0.49978	0.49978	0.49979	0.49980	0.49981	0.49981	0.49982	0.49983	0.49983
3.6	0.49984	0.49985	0.49985	0.49986	0.49986	0.49987	0.49987	0.49988	0.49988	0.49989
3.7	0.49989	0.49990	0.49990	0.49990	0.49991	0.49991	0.49992	0.49992	0.49992	0.49992
3.8	0.49993	0.49993	0.49993	0.49994	0.49994	0.49994	0.49994	0.49995	0.49995	0.49995
3.9	0.49995	0.49995	0.49996	0.49996	0.49996	0.49996	0.49996	0.49996	0.49997	0.49997
4.0	0.49997	0.49997	0.49997	0.49997	0.49997	0.49997	0.49998	0.49998	0.49998	0.49998

Formulas to Study

- General addition rules:

$$P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

$$P(A \cup B \cup C) = P(A) + P(B) + P(C) - P(A \cap B) - P(A \cap C) - P(B \cap C) + P(A \cap B \cap C)$$

- Conditional probability:

$$P(A|B) = \frac{P(A \cap B)}{P(B)}$$

- Rule of total probability:

$$P(A) = \sum_i P(B_i) \cdot P(A|B_i)$$

- Expected value:

$$\mu = E(X) = \sum_x x \cdot f(x), \quad \mu = E(X) = \int_{-\infty}^{\infty} x \cdot f(x)\, dx$$

- Expected value of a function:

$$E(g(X)) = \sum_x g(x) \cdot f(x), \quad E(g(X)) = \int_{-\infty}^{\infty} g(x) \cdot f(x)\, dx$$

$$E(aX + b) = aE(X) + b$$

- Variance:

$$\sigma^2 = E((X-\mu)^2) = \sum_x (x-\mu)^2 \cdot f(x), \quad \mu = E((X-\mu)^2) = \int_{-\infty}^{\infty} (x-\mu)^2 \cdot f(x)\, dx$$

$$\sigma^2 = E(X^2) - \mu^2$$

- Moment generating function:

$$M_X(t) = E(e^{tX}) = \sum_x e^{tx} \cdot f(x), \quad M_X(t) = E(e^{tX}) = \int_{-\infty}^{\infty} e^{tx} \cdot f(x)\, dx$$

$$E(X^r) = \frac{d^r}{dt^r} M_X(t)\Big|_{t=0}$$

- Marginal distributions:

$$g(x) = \sum_y f(x,y), \quad h(y) = \sum_x f(x,y)$$

$$g(x) = \int_{-\infty}^{\infty} f(x,y)\, dy, \quad h(y) = \int_{-\infty}^{\infty} f(x,y)\, dx$$

- Conditional probability distribution/density:

$$f(x|y) = \frac{f(x,y)}{h(y)}$$

- Expected value of a function of joint random variables:

$$E(g(X,Y)) = \sum_x \sum_y g(x,y) \cdot f(x,y), \quad E(g(X,Y)) = \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} g(x,y) \cdot f(x,y)\, dx\, dy$$

$$\mu_X = E(X) = \sum_x \sum_y x \cdot f(x,y), \quad \mu_Y = E(Y) = \sum_x \sum_y y \cdot f(x,y)$$

$$\mu_X = E(X) = \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} x \cdot f(x,y)\, dx\, dy, \quad \mu_Y = E(Y) = \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} y \cdot f(x,y)\, dx\, dy$$

- Covariance:

$$\text{cov(X,Y)} = E((X-\mu_X)(Y-\mu_Y)) = \sum_x \sum_y (x-\mu_X)(y-\mu_Y) \cdot f(x,y)$$

$$\text{cov(X,Y)} = E((X-\mu_X)(Y-\mu_Y)) = \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} (x-\mu_X)(y-\mu_Y) \cdot f(x,y)\, dx\, dy$$

$$\text{cov(X,Y)} = E(XY) - \mu_X \mu_Y$$

- Conditional expected value of a function of X:

$$E(u(X)|y) = \sum_x u(x) \cdot f(x|y), \quad E(u(X)|y) = \int_{-\infty}^{\infty} u(x) \cdot f(x|y)\, dx$$

- Conditional mean of X:

$$E(X|y) = \sum_x x \cdot f(x|y), \quad E(X|y) = \int_{-\infty}^{\infty} x \cdot f(x|y)\, dx$$