

התפלגויות בדידות

פונקציה יוצרת מומנטים $M(\alpha)$	שונות	תוחלת	פונקצית ההסתברות $p_X(k) = P(X = k)$	ההתפלגות וסימונה
$(1 - p + pe^t)^n$	$np(1-p)$	np	$p(k) = \binom{n}{k} p^k (1-p)^{n-k}$ $k=0,1,2,\dots$	בינומי $B(n,p)$ $n \geq 1$ שלם $0 < p < 1$
$1 - p + pe^t$	$p(1-p)$	p	$p(k) = p^k (1-p)^{1-k}$ $k=0,1$	ברנולי $B(p)$
$e^{\lambda(e^t-1)}$	λ	λ	$p(k) = e^{-\lambda} \frac{\lambda^k}{k!}$ $k=0,1,2,\dots$	פואסון $Poisson(\lambda)$ $\lambda > 0$
$\frac{p}{1 - (1-p)e^t}$	$\frac{1-p}{p^2}$	$\frac{1}{p}$	$p(k) = p(1-p)^{k-1}$ $k=1,2,3,\dots$	גיאומטרית $G(p)$ $0 < p < 1$
$\left(\frac{p}{1 - (1-p)e^t}\right)^r$	$\frac{r(1-p)}{p^2}$	$\frac{r(1-p)}{p}$	$p(k) = \binom{r+k-1}{k} p^r (1-p)^k$ $k=0,1,2,\dots$	בינומי שלילי $NB(p,r)$ $r > 0$ שלם $0 < p < 1$

התפלגויות רציפות

פונקציה יוצרת מומנטים $M(\alpha)$	שונות	תוחלת	פונקצית ההתפלגות המצטברת $F_X(t) = P(X \leq t)$	פונקצית צפיפות $f_X(x)$	ההתפלגות וסימונה
$\frac{e^{ab} - e^{a\alpha}}{\alpha(b-a)}$	$\frac{(b-a)^2}{12}$	$\frac{a+b}{2}$	$\frac{t-a}{b-a}$ $a \leq t \leq b$	$\frac{1}{b-a}$ $a \leq x \leq b$	אחידה $U(a,b)$
$\frac{\lambda}{\lambda - \alpha}$ $t < \lambda$	$1/\lambda^2$	$1/\lambda$	$1 - e^{-\lambda t}$ $t > 0$	$\lambda e^{-\lambda x}$ $x > 0$	מעריכית $\lambda > 0, \exp(\lambda)$
$\exp\left[\mu\alpha + \frac{\sigma^2\alpha^2}{2}\right]$	σ^2	μ	$\Phi\left(\frac{t-\mu}{\sigma}\right)$	$\frac{1}{\sigma\sqrt{2\pi}} \exp\left[-\frac{(x-\mu)^2}{2\sigma^2}\right]$ $-\infty < x < \infty$	נורמלית $N(\mu, \sigma^2)$ $\sigma > 0$
$\left(\frac{\lambda}{\lambda - \alpha}\right)^s$ $\alpha < \lambda$	$\frac{s}{\lambda^2}$	$\frac{s}{\lambda}$		$\frac{\lambda^s e^{-\lambda x} x^{s-1}}{\Gamma(s)}$ $0 < x$	Gamma $\gamma(s, \lambda)$ $0 < s, \lambda$
	$\frac{ab}{(a+b)^2(a+b+1)}$	$\frac{a}{a+b}$		$\frac{\Gamma(a+b)}{\Gamma(a)\Gamma(b)} x^{a-1} (1-x)^{b-1}$ $0 \leq x \leq 1$	Beta $\beta(a, b)$ $0 < a, b$

$$\Gamma(t) = \int_0^{\infty} x^{t-1} e^{-x} dx$$

ערכים של פונקציית ההתפלגות המצטברת הנורמלית סטנדרטית, $\Phi(x)$

$$\Phi(x) = \int_{-\infty}^x \frac{1}{\sqrt{2\pi}} e^{-y^2/2} dy$$

x	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	.5000	.5040	.5080	.5120	.5160	.5199	.5239	.5279	.5319	.5359
0.1	.5398	.5438	.5478	.5517	.5557	.5596	.5636	.5675	.5714	.5753
0.2	.5793	.5832	.5871	.5910	.5948	.5987	.6026	.6064	.6103	.6141
0.3	.6179	.6217	.6255	.6293	.6331	.6368	.6406	.6443	.6480	.6517
0.4	.6554	.6591	.6628	.6664	.6700	.6736	.6772	.6808	.6844	.6879
0.5	.6915	.6950	.6985	.7019	.7054	.7088	.7123	.7157	.7190	.7224
0.6	.7257	.7291	.7324	.7357	.7389	.7422	.7454	.7486	.7517	.7549
0.7	.7580	.7611	.7642	.7673	.7704	.7734	.7764	.7794	.7823	.7852
0.8	.7881	.7910	.7939	.7967	.7995	.8023	.8051	.8078	.8106	.8133
0.9	.8159	.8186	.8212	.8238	.8264	.8289	.8315	.8340	.8365	.8389
1.0	.8413	.8438	.8461	.8485	.8508	.8531	.8554	.8577	.8599	.8621
1.1	.8643	.8665	.8686	.8708	.8729	.8749	.8770	.8790	.8810	.8830
1.2	.8849	.8869	.8888	.8907	.8925	.8944	.8962	.8980	.8997	.9015
1.3	.9032	.9049	.9066	.9082	.9099	.9115	.9131	.9147	.9162	.9177
1.4	.9192	.9207	.9222	.9236	.9251	.9265	.9279	.9292	.9306	.9319
1.5	.9332	.9345	.9357	.9370	.9382	.9394	.9406	.9418	.9429	.9441
1.6	.9452	.9463	.9474	.9484	.9495	.9505	.9515	.9525	.9535	.9545
1.7	.9554	.9564	.9573	.9582	.9591	.9599	.9608	.9616	.9625	.9633
1.8	.9641	.9649	.9656	.9664	.9671	.9678	.9686	.9693	.9699	.9706
1.9	.9713	.9719	.9726	.9732	.9738	.9744	.9750	.9756	.9761	.9767
2.0	.9772	.9778	.9783	.9788	.9793	.9798	.9803	.9808	.9812	.9817
2.1	.9821	.9826	.9830	.9834	.9838	.9842	.9846	.9850	.9854	.9857
2.2	.9861	.9864	.9868	.9871	.9875	.9878	.9881	.9884	.9887	.9890
2.3	.9893	.9896	.9898	.9901	.9904	.9906	.9909	.9911	.9913	.9916
2.4	.9918	.9920	.9922	.9925	.9927	.9929	.9931	.9932	.9934	.9936
2.5	.9938	.9940	.9941	.9943	.9945	.9946	.9948	.9949	.9951	.9952
2.6	.9953	.9955	.9956	.9957	.9959	.9960	.9961	.9962	.9963	.9964
2.7	.9965	.9966	.9967	.9968	.9969	.9970	.9971	.9972	.9973	.9974
2.8	.9974	.9975	.9976	.9977	.9977	.9978	.9979	.9979	.9980	.9981
2.9	.9981	.9982	.9982	.9983	.9984	.9984	.9985	.9985	.9986	.9986
3.0	.9987	.9987	.9987	.9988	.9988	.9989	.9989	.9989	.9990	.9990
3.1	.9990	.9991	.9991	.9991	.9992	.9992	.9992	.9992	.9993	.9993
3.2	.9993	.9993	.9994	.9994	.9994	.9994	.9994	.9995	.9995	.9995
3.3	.9995	.9995	.9995	.9996	.9996	.9996	.9996	.9996	.9996	.9997
3.4	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9998

$\Phi(x)$	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90
x	0.0	0.126	0.253	0.385	0.524	0.674	0.842	1.036	1.282
$\Phi(x)$	0.91	0.92	0.93	0.94	0.95	0.96	0.97	0.98	0.99
x	1.341	1.405	1.476	1.555	1.645	1.751	1.881	2.054	2.326