DISTRIBUCION NORMAL

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Función de probabilidad:

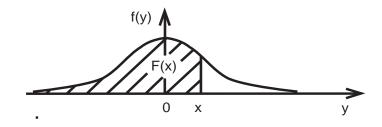
$$p(x) = \frac{1}{\sqrt{(2\pi) \cdot \sigma}} exp\left[-\frac{(x-\mu)^2}{2\sigma^2}\right] \quad para \ x \in (-\infty, +\infty)$$

Espacio paramétrico: $media\ \mu\in(-\infty,+\infty)$ $varianza\ \sigma^2\in(0,+\infty)$

Valor esperado: μ

Varianza: σ^2

Función generadora de momentos: $e^{(\mu t + \sigma^2 t^2/2)}$



DISTRIBUCION NORMAL ESTANDAR

Es un caso especial de la normal, en que $\mu=0$ y $\sigma^2=1$.

Función de densidad:

$$f(x) = \frac{1}{\sqrt{(2\pi)}} exp\left[-\frac{x^2}{2}\right]$$
 $para \ x \in (-\infty, +\infty)$

Valor esperado: 0

Varianza: 1

Función generadora de momentos: $e^{t^2/2}$

RELACION CON LA NORMAL ESTANDAR

Los valores de la función de distribución de la normal con parámetros μ y σ^2 se obtienen de la tabla de distribución **normal standard** (en que $\mu = 0$ y $\sigma^2 = 1$) como se muestra a continuación. Por esa razón sólo se entrega la tabla de la **normal standard**.

Si se requiere la probabilidad acumulada hasta la cuantila x, se efectúa la transformación $z=\frac{x-\mu}{\sigma}$ y se busca la probabilidad asociada a la cuantila z en la tabla de distribución **normal standard**.

Al revés, si se quiere saber a qué cuantila corresponde una probabilidad acumulada dada, F(z), se busca la cuantila z asociada a F(z) en la tabla de distribución **normal standard**. Entonces la correspondiente cuantila de la normal con parámetros μ y σ^2 es $x = \sigma z + \mu$.

TABLA DE DISTRIBUCION NORMAL ESTANDAR

La tabla entrega valores de la función de distribución (probabilidad acumulada) de la **normal standard**, es decir, valores de $F(z)=\int_{-\infty}^z f(y)dy$.

La cuantila z toma valores entre -4 y +4 variando en 0.005.

El entero y el primer decimal aparecen en el margen izquierdo. Los dos últimos decimales en el margen superior. Las probabilidades acumuladas aparecen en el cuerpo de la tabla.

TABLA DE DISTRIBUCION NORMAL

Cuantiles negativos

${f z}$	-95	-90	-85	-80	.mes neg -75	-70	-65	-60	-55	-50
-4.0	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
-3.9	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
-3.8	.0000	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001
-3.7	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001
-3.6	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001
-3.5	.0002	.0002	.0002	.0002	.0002	.0002	.0002	.0002	.0002	.0002
-3.4	.0002	.0002	.0002	.0003	.0003	.0003	.0003	.0003	.0003	.0003
-3.3	.0003	.0003	.0004	.0004	.0004	.0004	.0004	.0004	.0004	.0004
-3.2	.0005	.0005	.0005	.0005	.0005	.0005	.0005	.0006	.0006	.0006
-3.1	.0007	.0007	.0007	.0007	.0007	.0008	.0008	.0008	.0008	.0008
-3.0	.0010	.0010	.0010	.0010	.0011	.0011	.0011	.0011	.0011	.0011
-2.9	.0014	.0014	.0014	.0014	.0015	.0015	.0015	.0015	.0016	.0016
-2.8	.0019	.0019	.0020	.0020	.0020	.0021	.0021	.0021	.0022	.0022
-2.7	.0026	.0026	.0027	.0027	.0028	.0028	.0028	.0029	.0029	.0030
-2.6	.0035	.0036	.0036	.0037	.0037	.0038	.0038	.0039	.0040	.0040
-2.5	.0047	.0048	.0049	.0049	.0050	.0051	.0052	.0052	.0053	.0054
-2.4	.0063	.0064	.0065	.0066	.0067	.0068	.0069	.0069	.0070	.0071
-2.3	.0083	.0084	.0085	.0087	.0088	.0089	.0090	.0091	.0093	.0094
-2.2	.0109	.0110	.0112	.0113	.0115	.0116	.0118	.0119	.0121	.0122
-2.1	.0141	.0143	.0144	.0146	.0148	.0150	.0152	.0154	.0156	.0158
-2.0	.0181	.0183	.0185	.0188	.0190	.0192	.0195	.0197	.0199	.0202
-1.9	.0230	.0233	.0236	.0239	.0241	.0244	.0247	.0250	.0253	.0256
-1.8	.0290	.0294	.0297	.0301	.0304	.0307	.0311	.0314	.0318	.0322
-1.7	.0363	.0367	.0371	.0375	.0379	.0384	.0388	.0392	.0396	.0401
-1.6	.0450	.0455	.0460	.0465	.0470	.0475	.0480	.0485	.0490	.0495
-1.5	.0554	.0559	.0565	.0571	.0576	.0582	.0588	.0594	.0600	.0606
-1.4	.0675	.0681	.0688	.0694	.0701	.0708	.0715	.0721	.0728	.0735
-1.3	.0815	.0823	.0830	.0838	.0846	.0853	.0861	.0869	.0877	.0885
-1.2	.0977	.0985	.0994	.1003	.1012	.1020	.1029	.1038	.1047	.1056
-1.1	.1160	.1170	.1180	.1190	.1200	.1210	.1220	.1230	.1240	.1251
-1.0	.1368	.1379	.1390	.1401	.1412	.1423	.1434	.1446	.1457	.1469
-0.9	.1599	.1611	.1623	.1635	.1648	.1660	.1673	.1685	.1698	.1711
-0.8 -0.7	.1854	.1867	.1881	.1894	.1908	.1922	.1935	.1949	.1963	.1977
-0. <i>1</i> -0.6	.2133 .2435	.2148 .2451	.2162 .2467	.2177 .2483	.2192 .2498	.2206 .2514	.2221 .2530	.2236 .2546	.2251 $.2562$.2266 .2578
-0.6 -0.5	.2455	.2776	.2793	.2465	.2826	.2843	.2860	.2877	.2894	.2912
-0.5	.3103	.3121	.3138	.3156	.3174	.3192	.3210	.3228	.3246	.3264
-0.4	.3464	.3483	.3501	.3520	.3538	.3557	.3576	.3594	.3613	.3632
-0.2	.3840	.3859	.3878	.3897	.3917	.3936	.3955	.3974	.3994	.4013
-0.2	.4227	.4247	.4266	.4286	.4305	.4325	.4345	.4364	.4384	.4404
-0.1	.4622	.4641	.4661	.4681	.4701	.4721	.4741	.4761	.4781	.4801
5.0	1		.1001	.1001					.1.01	. 1001

DISTRIBUCION NORMAL (2)

Cuantiles negativos

\mathbf{z}	-45	-40	-35	-30	-25	-20	-15	-10	-05	-00
-4.0	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
-3.9	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
-3.8	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001
-3.7	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001
-3.6	.0001	.0001	.0001	.0001	.0001	.0001	.0002	.0002	.0002	.0002
-3.5	.0002	.0002	.0002	.0002	.0002	.0002	.0002	.0002	.0002	.0002
-3.4	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003
-3.3	.0004	.0004	.0004	.0004	.0004	.0005	.0005	.0005	.0005	.0005
-3.2	.0006	.0006	.0006	.0006	.0006	.0006	.0007	.0007	.0007	.0007
-3.1	.0008	.0008	.0009	.0009	.0009	.0009	.0009	.0009	.0010	.0010
-3.0	.0012	.0012	.0012	.0012	.0012	.0013	.0013	.0013	.0013	.0013
-2.9	.0016	.0016	.0017	.0017	.0017	.0018	.0018	.0018	.0018	.0019
-2.8	.0022	.0023	.0023	.0023	.0024	.0024	.0024	.0025	.0025	.0026
-2.7	.0030	.0031	.0031	.0032	.0032	.0033	.0033	.0034	.0034	.0035
-2.6	.0041	.0041	.0042	.0043	.0043	.0044	.0045	.0045	.0046	.0047
-2.5	.0055	.0055	.0056	.0057	.0058	.0059	.0060	.0060	.0061	.0062
-2.4	.0072	.0073	.0074	.0075	.0077	.0078	.0079	.0080	.0081	.0082
-2.3	.0095	.0096	.0098	.0099	.0100	.0102	.0103	.0104	.0106	.0107
-2.2	.0124	.0125	.0127	.0129	.0130	.0132	.0134	.0136	.0137	.0139
-2.1	.0160	.0162	.0164	.0166	.0168	.0170	.0172	.0174	.0176	.0179
-2.0	.0204	.0207	.0209	.0212	.0214	.0217	.0220	.0222	.0225	.0228
-1.9	.0259	.0262	.0265	.0268	.0271	.0274	.0277	.0281	.0284	.0287
-1.8	.0325	.0329	.0333	.0336	.0340	.0344	.0348	.0351	.0355	.0359
-1.7	.0405	.0409	.0414	.0418	.0423	.0427	.0432	.0436	.0441	.0446
-1.6	.0500	.0505	.0510	.0516	.0521	.0526	.0532	.0537	.0542	.0548
-1.5	.0612	.0618	.0624	.0630	.0636	.0643	.0649	.0655	.0662	.0668
-1.4	.0742	.0749	.0756	.0764	.0771	.0778	.0785	.0793	.0800	.0808
-1.3	.0893	.0901	.0909	.0918	.0926	.0934	.0943	.0951	.0959	.0968
-1.2	.1066	.1075	.1084	.1093	.1103	.1112	.1122	.1131	.1141	.1151
-1.1	.1261	.1271	.1282	.1292	.1303	.1314	.1324	.1335	.1346	.1357
-1.0	.1480	.1492	.1503	.1515	.1527	.1539	.1551	.1562	.1574	.1587
-0.9	.1723	.1736	.1749	.1762	.1775	.1788	.1801	.1814	.1827	.1841
-0.8	.1991	.2005	.2019	.2033	.2047	.2061	.2075	.2090	.2104	.2119
-0.7	.2281	.2297	.2312	.2327	.2342	.2358	.2373	.2389	.2404	.2420
-0.6	.2595	.2611	.2627	.2643	.2660	.2676	.2693	.2709	.2726	.2743
-0.5	.2929	.2946	.2963	.2981	.2998	.3015	.3033	.3050	.3068	.3085
-0.4	.3282	.3300	.3318	.3336	.3354	.3372	.3391	.3409	.3427	.3446
-0.3	.3650	.3669	.3688	.3707	.3726	.3745	.3764	.3783	.3802	.3821
-0.2	.4032	.4052	.4071	.4090	.4110	.4129	.4149	.4168	.4188	.4207
-0.1	.4424	.4443	.4463	.4483	.4503	.4522	.4542	.4562	.4582	.4602
-0.0	.4821	.4840	.4860	.4880	.4900	.4920	.4940	.4960	.4980	.5000

DISTRIBUCION NORMAL (3)

Cuantilas	
Chantiles	positivos

z 00 05 10 15 20 25 30 35 40 45 0.0 .5000 .5020 .5040 .5060 .5080 .5100 .5120 .5140 .5160 .5175 .5576 .5576 .527 .5933 .5812 .5832 .5851 .5871 .5890 .5910 .5929 .5948 .5968 .03 .6179 .6198 .6217 .6236 .6255 .6274 .6293 .6312 .6331 .6350 .04 .6554 .6573 .6591 .6069 .6628 .6646 .6664 .6682 .6700 .711 .7064 .77014 .7701 .766 .7257 .7274 .7291 .7307 .7324 .7340 .7337 .7357 .7373 .7358 .7405 .7405 .7405 .7405 .7405 .7405 .7405 .7405 .7405 .7405 .7405 .7405 .7406 .7407 .7406 .7406 .7407 .7406 <td< th=""><th colspan="10">Cuantiles positivos</th></td<>	Cuantiles positivos										
0.1 5398 5418 5438 5458 5478 5497 5517 5537 5557 5568 0.2 5793 5812 5832 5851 5871 5890 5910 5929 5948 5968 0.3 6179 6188 6217 6236 6255 6274 6293 6312 6331 6350 0.4 6554 65573 6591 6690 6698 7602 7019 7037 7054 7071 0.5 6915 6932 6950 6967 6985 7002 7019 7037 7054 7071 0.7 7580 7596 7611 7627 7642 7658 7673 7881 7995 7199 0.9 8159 8173 8186 8199 8212 8225 8238 8251 8264 8277 1.0 8413 8426 8488 8498 8867 8907 8916 8929 8739<	\mathbf{z}	00	05	10	15	20	25	30	35	40	45
0.2 .5793 .5812 .5832 .5851 .5871 .5890 .5910 .5929 .5948 .5968 0.3 .6179 .6198 .6217 .6236 .6255 .6274 .6293 .6312 .6331 .6350 0.4 .6554 .6573 .6691 .6698 .6060 .6688 .6464 .6664 .6682 .6700 .6718 0.6 .7257 .7274 .7291 .7307 .7324 .7340 .7337 .7333 .7405 0.7 .7580 .7596 .7611 .7627 .7642 .7658 .7673 .7688 .7703 .7719 0.8 .7881 .7896 .7910 .7925 .7939 .7953 .7967 .7981 .7995 .8009 0.9 .8159 .8173 .8186 .8199 .8212 .8225 .8238 .8251 .8264 .8277 1.0 .8133 .8432 .8449 .8461 .8676 <	0.0	.5000	.5020	.5040	.5060	.5080	.5100	.5120	.5140	.5160	.5179
0.3 .6179 .6198 .6217 .6236 .6255 .6274 .6293 .6312 .6331 .6350 0.4 .6554 .6573 .6591 .6609 .6628 .6646 .6664 .6682 .6700 .6718 0.5 .6915 .6932 .6950 .6967 .6985 .7002 .7019 .7037 .7054 .7071 0.6 .7257 .7274 .7291 .7307 .7324 .7340 .7357 .7373 .7389 .7405 0.7 .7580 .7596 .7611 .7627 .7642 .7658 .7673 .7688 .7703 .7719 0.8 .7881 .7896 .7910 .7925 .7939 .7953 .7967 .7981 .7995 .8099 0.9 .8153 .8173 .8186 .8199 .8212 .8225 .8238 .8241 .8264 .8277 1.0 .8113 .8654 .8654 .8665 .8676 <	0.1	.5398	.5418	.5438	.5458	.5478	.5497	.5517	.5537	.5557	.5576
0.4 .6554 .6573 .6591 .6609 .6628 .6646 .6664 .6682 .6700 .6718 0.5 .6915 .6932 .6950 .6967 .6985 .7002 .7019 .7037 .7054 .7071 0.6 .7257 .7274 .7291 .7307 .7324 .7340 .7357 .7373 .7389 .7405 0.7 .7580 .7596 .7611 .7627 .7642 .7658 .7673 .7681 .7703 .7719 0.8 .7881 .7896 .7910 .7925 .7939 .7953 .7967 .7981 .7995 .8009 0.9 .8159 .8178 .8186 .8199 .8212 .8225 .8238 .8251 .8208 .8571 .8009 1.1 .8643 .8665 .8676 .8686 .8697 .8708 .8718 .8729 .8739 1.2 .8849 .8859 .8878 .8888 .8897 <	0.2	.5793	.5812	.5832	.5851	.5871	.5890	.5910	.5929	.5948	.5968
0.5 .6915 .6932 .6950 .6967 .6985 .7002 .7019 .7037 .7054 .7071 0.6 .7257 .7274 .7291 .7307 .7324 .7340 .7357 .7373 .7389 .7405 0.7 .7580 .7596 .7611 .7627 .7642 .7658 .7673 .7688 .7703 .7719 0.8 .7881 .7896 .7910 .7925 .7937 .7957 .7981 .7995 .8009 0.9 .8159 .8166 .8199 .8212 .8225 .8238 .8251 .8264 .8277 1.0 .8413 .8426 .8438 .8449 .8461 .8473 .8485 .8878 .8878 .8907 .8916 .8225 .8738 1.2 .8849 .8869 .8878 .8888 .8897 .8907 .8916 .8925 .8934 1.3 .9032 .9941 .99049 .9957 .9966	0.3	.6179	.6198	.6217	.6236	.6255	.6274	.6293	.6312	.6331	.6350
0.6 .7257 .7274 .7291 .7307 .7324 .7340 .7357 .7333 .7389 .7405 0.7 .7580 .7596 .7611 .7627 .7642 .7658 .7673 .7688 .7703 .7719 0.8 .7881 .7896 .7910 .7925 .7939 .7953 .7967 .7981 .7995 .8009 0.9 .8153 .8186 .8199 .8212 .8225 .8238 .8251 .8264 .8277 1.0 .8413 .8426 .8438 .8449 .8461 .8478 .8487 .8848 .8497 .8508 .8529 .8739 1.1 .8643 .8654 .8665 .8666 .8686 .8697 .8907 .8916 .8925 .8739 1.2 .8849 .8859 .8889 .8897 .8907 .8906 .8925 .8934 1.3 .9032 .9041 .9049 .9057 .9066 .9074 <	0.4	.6554	.6573	.6591	.6609	.6628	.6646	.6664	.6682	.6700	.6718
0.7 .7580 .7596 .7611 .7627 .7642 .7658 .7673 .7688 .7703 .7719 0.8 .7881 .7896 .7910 .7925 .7939 .7953 .7967 .7981 .7995 .8009 0.9 .8159 .8173 .8186 .8199 .8212 .8225 .8238 .8251 .8264 .8277 1.0 .8413 .8426 .8438 .8449 .8461 .8473 .8485 .8497 .8508 .8520 1.1 .8643 .8665 .8665 .8666 .8666 .8667 .8708 .8718 .8729 .8739 1.2 .8849 .8859 .8869 .8878 .8888 .8897 .8901 .8999 .9107 1.4 .91922 .9200 .9207 .9215 .9222 .9229 .9236 .9244 .9251 .9258 1.5 .9332 .9338 .9345 .9351 .9357 .9364	0.5	.6915	.6932	.6950	.6967	.6985	.7002	.7019	.7037	.7054	.7071
0.8 .7881 .7896 .7910 .7925 .7939 .7953 .7967 .7981 .7995 .8009 0.9 .8159 .8173 .8186 .8199 .8212 .8225 .8238 .8251 .8264 .8277 1.0 .8413 .8426 .8438 .8449 .8461 .8473 .8485 .8497 .8508 .8520 1.1 .8643 .8654 .8665 .8666 .8696 .8670 .8708 .8718 .8729 .8739 1.2 .8849 .8859 .8878 .8888 .8897 .8916 .8925 .8934 1.3 .9932 .9041 .9049 .9057 .9066 .9074 .9082 .9091 .9099 .9171 1.4 .9192 .9200 .9207 .9215 .9222 .9229 .9236 .9244 .9251 .9258 1.5 .9332 .9338 .9463 .9468 .9474 .9479 .9484 <	0.6	.7257	.7274	.7291	.7307	.7324	.7340	.7357	.7373	.7389	.7405
0.9 8.8159 8.8173 8.8186 8.8199 8.212 8.225 8.238 8.251 8.264 8.272 1.0 8.413 8.426 8.438 8.449 8.461 8.473 8.485 8.497 .8508 .8520 1.1 8.643 8.655 8.665 8.676 8.686 8.697 .8708 .8718 .8729 .8739 1.2 8.849 .8859 .8869 .8878 .8888 .8897 .8907 .8916 .8925 .8934 1.3 .9032 .9041 .9049 .9057 .9066 .9074 .9082 .9991 .9099 .9107 1.4 .9192 .9200 .9207 .9215 .9222 .9229 .9236 .9244 .9251 .9258 1.5 .9333 .9345 .9351 .9351 .9377 .9364 .9409 .9495 .9580 1.7 .9554 .9559 .9564 .9568 .9577 .9582	0.7	.7580	.7596	.7611	.7627	.7642	.7658	.7673	.7688	.7703	.7719
1.0 8413 8426 8438 8449 8461 8473 8485 8497 8508 8520 1.1 8643 8654 8665 8676 8686 8697 8708 8718 8729 8739 1.2 8849 8859 8869 8878 8888 8897 8907 8916 8925 8934 1.3 9932 9041 9049 9057 9066 9074 9082 9091 9099 9107 1.4 9192 9200 9207 9215 9222 9229 9236 9244 9251 9258 1.5 9332 9338 9345 9351 9357 9364 9400 9495 9586 1.6 .9452 .9458 .9463 .9468 .9474 ,9449 .9490 .9495 .9500 1.7 .9554 .9559 .9564 .9562 .9660 .9660 .9664 .9667 .9660 .9660	0.8	.7881	.7896	.7910	.7925	.7939	.7953	.7967	.7981	.7995	.8009
1.1 8643 8654 8665 8676 8686 8697 8708 8718 8729 8739 1.2 8849 8859 8869 8878 8888 8897 8907 8916 8925 8934 1.3 9932 .9041 .9049 .9057 .9066 .9074 .9082 .9091 .9099 .9107 1.4 .9192 .9200 .9207 .9215 .9222 .9229 .9236 .9244 .9251 .9258 1.5 .9332 .9338 .9345 .9351 .9357 .9364 .9370 .9376 .9382 .9388 1.6 .9452 .9458 .9463 .9468 .9474 .9479 .9484 .9490 .9495 .9500 1.7 .9554 .9559 .9564 .9568 .9573 .9577 .9582 .9586 .9591 .9555 1.8 .9641 .9645 .9649 .9652 .9656 .9660 .9664 .9667 .9671 .9675 1.9 .9713 .9776	0.9	.8159	.8173	.8186	.8199	.8212	.8225	.8238	.8251	.8264	.8277
1.2 .8849 .8859 .8869 .8878 .8888 .8897 .8907 .8916 .8925 .8934 1.3 .9032 .9041 .9049 .9057 .9066 .9074 .9082 .9991 .9099 .9107 1.4 .9192 .9200 .9207 .9215 .9222 .9229 .9236 .9244 .9251 .9258 1.5 .9332 .9338 .9345 .9351 .9357 .9364 .9370 .9376 .9382 .9388 1.6 .9452 .9458 .9463 .9468 .9474 .9479 .9484 .9490 .9495 .9500 1.7 .9554 .9559 .9564 .9568 .9573 .9576 .9582 .9586 .9591 .9595 1.8 .9641 .9645 .9649 .9652 .9656 .9660 .9667 .9667 .9671 .9675 1.9 .9713 .9776 .9778 .9780 .9732 <	1.0	.8413	.8426	.8438	.8449	.8461	.8473	.8485	.8497	.8508	.8520
1.3 .9032 .9041 .9049 .9057 .9066 .9074 .9082 .9091 .9099 .9107 1.4 .9192 .9200 .9207 .9215 .9222 .9229 .9236 .9244 .9251 .9258 1.5 .9332 .9338 .9345 .9351 .9357 .9364 .9370 .9376 .9382 .9388 1.6 .9452 .9458 .9463 .9468 .9474 .9479 .9484 .9490 .9495 .9500 1.7 .9554 .9559 .9564 .9568 .9573 .9577 .9582 .9566 .9561 .9667 .9671 .9675 1.9 .9713 .9716 .9719 .9723 .9726 .9729 .9735 .9735 .9738 .9741 2.0 .9772 .9775 .9778 .9780 .9783 .9786 .9788 .9791 .9793 .9796 2.1 .9821 .9824 .9826 <	1.1	.8643	.8654	.8665	.8676	.8686	.8697	.8708	.8718	.8729	.8739
1.4 .9192 .9200 .9207 .9215 .9222 .9229 .9236 .9244 .9251 .9388 1.5 .9332 .9338 .9345 .9351 .9357 .9364 .9370 .9376 .9382 .9388 1.6 .9452 .9458 .9463 .9468 .9474 .9479 .9484 .9490 .9495 .9500 1.7 .9554 .9559 .9564 .9568 .9573 .9577 .9582 .9566 .9591 .9595 1.8 .9641 .9645 .9649 .9652 .9656 .9660 .9664 .9667 .9671 .9675 1.9 .9713 .9716 .9719 .9723 .9726 .9729 .9732 .9735 .9738 .9741 2.0 .9772 .9775 .9778 .9780 .9783 .9786 .9788 .9791 .9793 .9796 2.1 .9821 .9824 .9826 .9828 .9830 <	1.2	.8849	.8859	.8869	.8878	.8888	.8897	.8907	.8916	.8925	.8934
1.5 .9332 .9338 .9345 .9351 .9357 .9364 .9370 .9376 .9382 .9385 1.6 .9452 .9458 .9463 .9468 .9474 .9479 .9484 .9490 .9495 .9500 1.7 .9554 .9559 .9564 .9568 .9573 .9577 .9582 .9586 .9591 .9595 1.8 .9641 .9645 .9649 .9652 .9656 .9660 .9664 .9667 .9671 .9675 1.9 .9713 .9716 .9719 .9723 .9726 .9729 .9732 .9735 .9738 .9741 2.0 .9772 .9775 .9778 .9780 .9783 .9786 .9788 .9791 .9793 .9796 2.1 .9821 .9824 .9866 .9888 .9870 .9871 .9836 .9838 .9840 2.2 .9861 .9863 .9864 .9866 .9868 .9870 <	1.3	.9032	.9041	.9049	.9057	.9066	.9074	.9082	.9091	.9099	.9107
1.6 .9452 .9458 .9463 .9468 .9474 .9479 .9484 .9490 .9495 .9591 1.7 .9554 .9559 .9564 .9568 .9573 .9577 .9582 .9586 .9591 .9595 1.8 .9641 .9645 .9649 .9652 .9656 .9660 .9664 .9667 .9671 .9675 1.9 .9713 .9716 .9719 .9723 .9726 .9729 .9732 .9735 .9738 .9741 2.0 .9772 .9775 .9778 .9780 .9783 .9786 .9788 .9791 .9793 .9796 2.1 .9821 .9824 .9866 .9828 .9830 .9834 .9836 .9838 .9840 2.2 .9861 .9863 .9864 .9866 .9868 .9870 .9871 .9873 .9875 .9876 2.3 .9983 .9999 .9920 .9921 .9922 .9923 <	1.4	.9192	.9200	.9207	.9215	.9222	.9229	.9236	.9244	.9251	.9258
1.7 .9554 .9559 .9564 .9568 .9573 .9577 .9582 .9586 .9591 .9595 1.8 .9641 .9645 .9649 .9652 .9656 .9660 .9664 .9667 .9671 .9675 1.9 .9713 .9716 .9719 .9723 .9726 .9729 .9732 .9735 .9738 .9741 2.0 .9772 .9775 .9778 .9780 .9783 .9786 .9788 .9791 .9793 .9796 2.1 .9821 .9824 .9826 .9828 .9830 .9834 .9836 .9838 .9840 2.2 .9861 .9863 .9864 .9866 .9868 .9870 .9871 .9873 .9875 .9876 2.3 .9893 .9894 .9896 .9897 .9898 .9900 .9901 .9902 .9904 .9905 2.4 .9918 .9919 .9920 .9921 .9922 .9923 .9925 .9926 .9927 .9928 2.5 .9938 .9939	1.5	.9332	.9338	.9345	.9351	.9357	.9364	.9370	.9376	.9382	.9388
1.8 .9641 .9645 .9649 .9652 .9656 .9660 .9664 .9667 .9671 .9675 1.9 .9713 .9716 .9719 .9723 .9726 .9729 .9732 .9735 .9738 .9741 2.0 .9772 .9775 .9778 .9780 .9783 .9786 .9788 .9791 .9793 .9796 2.1 .9821 .9824 .9826 .9828 .9830 .9832 .9834 .9836 .9838 .9840 2.2 .9861 .9863 .9864 .9866 .9868 .9870 .9871 .9873 .9875 .9876 2.3 .9893 .9846 .9866 .9868 .9870 .9901 .9902 .9904 .9905 2.4 .9918 .9919 .9920 .9921 .9922 .9923 .9925 .9926 .9927 .9928 2.5 .9938 .9939 .9940 .9941 .9942 .9943 <	1.6	.9452	.9458	.9463	.9468	.9474	.9479	.9484	.9490	.9495	.9500
1.9 .9713 .9716 .9719 .9723 .9726 .9729 .9732 .9735 .9738 .9741 2.0 .9772 .9775 .9778 .9780 .9783 .9786 .9788 .9791 .9793 .9796 2.1 .9821 .9824 .9826 .9828 .9830 .9832 .9834 .9836 .9838 .9840 2.2 .9861 .9863 .9864 .9866 .9868 .9870 .9871 .9873 .9875 .9876 2.3 .9893 .9894 .9896 .9897 .9898 .9900 .9901 .9902 .9904 .9905 2.4 .9918 .9919 .9920 .9921 .9922 .9923 .9925 .9926 .9927 .9928 2.5 .9938 .9939 .9940 .9941 .9942 .9943 .9944 .9945 .9945 2.6 .9953 .9956 .9955 .9956 .9957 .9957 <	1.7	.9554	.9559	.9564	.9568	.9573	.9577	.9582	.9586	.9591	.9595
2.0 .9772 .9775 .9778 .9780 .9783 .9786 .9788 .9791 .9793 .9796 2.1 .9821 .9824 .9826 .9828 .9830 .9832 .9834 .9836 .9838 .9840 2.2 .9861 .9863 .9864 .9866 .9868 .9870 .9871 .9873 .9875 .9876 2.3 .9893 .9894 .9896 .9897 .9898 .9900 .9901 .9902 .9904 .9905 2.4 .9918 .9919 .9920 .9921 .9922 .9923 .9925 .9926 .9927 .9928 2.5 .9938 .9939 .9940 .9941 .9942 .9943 .9944 .9945 .9945 2.6 .9953 .9956 .9955 .9956 .9957 .9958 .9959 .9959 2.7 .9965 .9966 .9967 .9967 .9968 .9968 .9969 .9969 .9977 2.8 .9974 .9982 .9982 .9983 .9983	1.8	.9641	.9645	.9649	.9652	.9656	.9660	.9664	.9667	.9671	.9675
2.1 .9821 .9824 .9826 .9828 .9830 .9832 .9834 .9836 .9838 .9840 2.2 .9861 .9863 .9864 .9866 .9868 .9870 .9871 .9873 .9875 .9876 2.3 .9893 .9894 .9896 .9897 .9898 .9900 .9901 .9902 .9904 .9905 2.4 .9918 .9919 .9920 .9921 .9922 .9923 .9925 .9926 .9927 .9928 2.5 .9938 .9939 .9940 .9941 .9942 .9943 .9944 .9945 .9945 2.6 .9953 .9954 .9955 .9955 .9956 .9957 .9958 .9958 .9959 .9959 2.7 .9965 .9966 .9967 .9967 .9968 .9968 .9969 .9969 .9977 2.8 .9974 .9975 .9976 .9976 .9977 .9977 .9977 .9977 .9977 2.9 .9981 .9982 .9982 .9983	1.9	.9713	.9716	.9719	.9723	.9726	.9729	.9732	.9735	.9738	.9741
2.2 .9861 .9863 .9864 .9866 .9868 .9870 .9871 .9873 .9875 .9876 2.3 .9893 .9894 .9896 .9897 .9898 .9900 .9901 .9902 .9904 .9905 2.4 .9918 .9919 .9920 .9921 .9922 .9923 .9925 .9926 .9927 .9928 2.5 .9938 .9939 .9940 .9941 .9942 .9943 .9944 .9945 .9945 2.6 .9953 .9954 .9955 .9955 .9956 .9957 .9958 .9959 .9959 2.7 .9965 .9966 .9967 .9967 .9968 .9968 .9969 .9969 .9970 2.8 .9974 .9975 .9976 .9976 .9977 .9977 .9977 .9977 .9977 .9977 .9978 2.9 .9981 .9982 .9982 .9982 .9983 .9983 .9988 .9988 .9988 .9988 3.1 .9990 .9997 .9991	2.0	.9772	.9775	.9778	.9780	.9783	.9786	.9788	.9791	.9793	.9796
2.3 .9893 .9894 .9896 .9897 .9898 .9900 .9901 .9902 .9904 .9905 2.4 .9918 .9919 .9920 .9921 .9922 .9923 .9925 .9926 .9927 .9928 2.5 .9938 .9939 .9940 .9941 .9942 .9943 .9944 .9945 .9945 2.6 .9953 .9954 .9955 .9955 .9956 .9957 .9957 .9958 .9959 .9959 2.7 .9965 .9966 .9966 .9967 .9968 .9968 .9969 .9969 .9970 2.8 .9974 .9975 .9976 .9976 .9976 .9977 .9977 .9977 .9977 2.9 .9981 .9982 .9982 .9982 .9983 .9983 .9983 .9984 .9984 3.0 .9987 .9987 .9987 .9988 .9988 .9988 .9988 .998 3.1 .9990 .9991 .9991 .9991 .9991 .9991 .9991	2.1	.9821	.9824	.9826	.9828	.9830	.9832	.9834	.9836	.9838	.9840
2.4 .9918 .9919 .9920 .9921 .9922 .9923 .9925 .9926 .9927 .9928 2.5 .9938 .9939 .9940 .9940 .9941 .9942 .9943 .9944 .9945 .9945 2.6 .9953 .9954 .9955 .9955 .9956 .9957 .9957 .9958 .9959 .9959 2.7 .9965 .9966 .9966 .9967 .9967 .9968 .9968 .9969 .9969 .9970 2.8 .9974 .9975 .9976 .9976 .9976 .9977 .9977 .9977 .9978 2.9 .9981 .9982 .9982 .9982 .9983 .9983 .9983 .9983 .9984 .9984 .9984 3.0 .9987 .9987 .9987 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9981 .9991 .9991 .9991 .9991 .9991 .9991 .9991 .9991 .999	2.2	.9861	.9863	.9864	.9866	.9868	.9870	.9871	.9873	.9875	.9876
2.5 .9938 .9939 .9940 .9940 .9941 .9942 .9943 .9944 .9945 .9955 2.6 .9953 .9954 .9955 .9955 .9956 .9957 .9957 .9958 .9959 .9959 2.7 .9965 .9966 .9966 .9967 .9967 .9968 .9968 .9969 .9969 .9970 2.8 .9974 .9975 .9976 .9976 .9976 .9977 .9977 .9977 .9978 2.9 .9981 .9982 .9982 .9982 .9983 .9983 .9983 .9984 .9984 3.0 .9987 .9987 .9987 .9987 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9981 .9991 .9991 .9991 .9991 .9991 .9991 .9991 .9991 .9991 .9991 .9991 .9991 <td>2.3</td> <td>.9893</td> <td>.9894</td> <td>.9896</td> <td>.9897</td> <td>.9898</td> <td>.9900</td> <td>.9901</td> <td>.9902</td> <td>.9904</td> <td>.9905</td>	2.3	.9893	.9894	.9896	.9897	.9898	.9900	.9901	.9902	.9904	.9905
2.6 .9953 .9954 .9955 .9955 .9956 .9957 .9957 .9958 .9959 .9959 .9959 2.7 .9965 .9966 .9966 .9967 .9967 .9968 .9968 .9969 .9969 .9970 2.8 .9974 .9975 .9975 .9976 .9976 .9976 .9977 .9977 .9977 .9978 2.9 .9981 .9982 .9982 .9982 .9983 .9983 .9983 .9988 .9981 .9991 .9991 .9991 .9991 .9991 .9991 .9991 .9991 .9992 .9992 .9992 .9994 .9994	2.4	.9918	.9919	.9920	.9921	.9922	.9923	.9925	.9926	.9927	.9928
2.7 .9965 .9966 .9966 .9967 .9967 .9968 .9968 .9969 .9969 .9970 2.8 .9974 .9975 .9975 .9976 .9976 .9976 .9977 .9977 .9977 .9978 2.9 .9981 .9982 .9982 .9982 .9983 .9983 .9983 .9984 .9984 3.0 .9987 .9987 .9987 .9987 .9988 .9988 .9988 .9988 .9988 3.1 .9990 .9991 .9991 .9991 .9991 .9991 .9991 .9991 .9991 .9992 .9992 3.2 .9993 .9993 .9993 .9994 .9994 .9994 .9994 .9994 .9994 .9994 .9994 .9994 .9994 .9994 .9994 .9994 .9994 .9994 .9994 .9994 .9994 .9994 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9997 .9997 .9997 .9997 .9997 .9997 .9997	2.5	.9938	.9939	.9940	.9940	.9941	.9942	.9943	.9944	.9945	.9945
2.8 .9974 .9975 .9975 .9976 .9976 .9976 .9977 .9977 .9977 .9977 .9978 2.9 .9981 .9982 .9982 .9983 .9983 .9983 .9984 .9984 3.0 .9987 .9987 .9987 .9988 .9988 .9988 .9988 .9988 3.1 .9990 .9991 .9991 .9991 .9991 .9991 .9991 .9991 .9991 .9992 .9992 3.2 .9993 .9993 .9993 .9994 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997	2.6	.9953	.9954	.9955	.9955	.9956	.9957	.9957	.9958	.9959	.9959
2.9 .9981 .9982 .9982 .9982 .9983 .9983 .9983 .9984 .9984 .9988 3.0 .9987 .9987 .9987 .9987 .9988 .9991 .9991 .9991 .9991 .9991 .9991 .9991 .9991 .9991 .9991 .9991 .9991 .9991 .9991 .9992 .9992 .9992 .9992 .9992 .9994 .9994 .9994 .9994 .9994 .9994 .9994 .9994 .9994 .9994 .9994 .9994 .9994 .9994 .9994 .9994 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9998 .9998 .9998	2.7	.9965	.9966	.9966	.9967	.9967	.9968	.9968	.9969	.9969	.9970
3.0 .9987 .9987 .9987 .9987 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9988 .9992 .9992 .9992 .9992 .9992 .9992 .9992 .9992 .9992 .9992 .9994 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9998 .9998 .9998 .9998 .9998 .9998 .9998 .9998 .9998 .9998 .9999 .9999 .9999 .9999 .	2.8	.9974	.9975	.9975	.9976	.9976	.9976	.9977	.9977	.9977	.9978
3.1 .9990 .9990 .9991 .9991 .9991 .9991 .9991 .9991 .9992 .9992 .9992 3.2 .9993 .9993 .9993 .9994 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9998 .9998 .9998 .9998 .9998 .9998 .9998 .9998 .9998 .9998 .9998 .9999	2.9	.9981	.9982	.9982	.9982	.9982	.9983	.9983	.9983	.9984	.9984
3.2 .9993 .9993 .9993 .9994 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9998 .9998 .9998 .9998 .9998 .9998 .9998 .9998 .9998 .9998 .9998 .9999 .	3.0	.9987	.9987	.9987	.9987	.9987	.9988	.9988	.9988	.9988	.9988
3.3 .9995 .9995 .9995 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9996 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9997 .9998 .9998 .9998 .9998 .9998 .9998 .9998 .9998 .9999 .	3.1	.9990	.9990	.9991	.9991	.9991	.9991	.9991	.9991	.9992	.9992
3.4 .9997 .9998 .9998 .9998 .9998 .9998 .9998 .9998 .9999 .	3.2	.9993	.9993	.9993	.9993	.9994	.9994	.9994	.9994	.9994	.9994
3.5 .9998 .9998 .9998 .9998 .9998 .9998 .9998 .9998 .9998 .9998 .9998 .9998 .9999 .	3.3	.9995	.9995	.9995	.9995	.9995	.9996	.9996	.9996	.9996	.9996
3.6 .9998 .9998 .9998 .9999 .	3.4	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9997
3.7 .9999 <t< td=""><td>3.5</td><td>.9998</td><td>.9998</td><td>.9998</td><td>.9998</td><td>.9998</td><td>.9998</td><td>.9998</td><td>.9998</td><td>.9998</td><td>.9998</td></t<>	3.5	.9998	.9998	.9998	.9998	.9998	.9998	.9998	.9998	.9998	.9998
3.8	3.6	.9998	.9998	.9998	.9998	.9999	.9999	.9999	.9999	.9999	.9999
3.9 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	3.7	.9999	.9999	.9999	.9999	.9999	.9999	.9999	.9999	.9999	.9999
	3.8	.9999	.9999	.9999	.9999	.9999	.9999	.9999	.9999	.9999	.9999
4.0 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	3.9	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
	4.0	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

DISTRIBUCION NORMAL (4)

Cuantiles positivos

\mathbf{z}	50	55	60	65	70	75	80	85	90	95
0.0	.5199	.5219	.5239	.5259	.5279	.5299	.5319	.5339	.5359	.5378
0.1	.5596	.5616	.5636	.5655	.5675	.5695	.5714	.5734	.5753	.5773
0.2	.5987	.6006	.6026	.6045	.6064	.6083	.6103	.6122	.6141	.6160
0.3	.6368	.6387	.6406	.6424	.6443	.6462	.6480	.6499	.6517	.6536
0.4	.6736	.6754	.6772	.6790	.6808	.6826	.6844	.6862	.6879	.6897
0.5	.7088	.7106	.7123	.7140	.7157	.7174	.7190	.7207	.7224	.7241
0.6	.7422	.7438	.7454	.7470	.7486	.7502	.7517	.7533	.7549	.7565
0.7	.7734	.7749	.7764	.7779	.7794	.7808	.7823	.7838	.7852	.7867
0.8	.8023	.8037	.8051	.8065	.8078	.8092	.8106	.8119	.8133	.8146
0.9	.8289	.8302	.8315	.8327	.8340	.8352	.8365	.8377	.8389	.8401
1.0	.8531	.8543	.8554	.8566	.8577	.8588	.8599	.8610	.8621	.8632
1.1	.8749	.8760	.8770	.8780	.8790	.8800	.8810	.8820	.8830	.8840
1.2	.8944	.8953	.8962	.8971	.8980	.8988	.8997	.9006	.9015	.9023
1.3	.9115	.9123	.9131	.9139	.9147	.9154	.9162	.9170	.9177	.9185
1.4	.9265	.9272	.9279	.9285	.9292	.9299	.9306	.9312	.9319	.9325
1.5	.9394	.9400	.9406	.9412	.9418	.9424	.9429	.9435	.9441	.9446
1.6	.9505	.9510	.9515	.9520	.9525	.9530	.9535	.9540	.9545	.9550
1.7	.9599	.9604	.9608	.9612	.9616	.9621	.9625	.9629	.9633	.9637
1.8	.9678	.9682	.9686	.9689	.9693	.9696	.9699	.9703	.9706	.9710
1.9	.9744	.9747	.9750	.9753	.9756	.9759	.9761	.9764	.9767	.9770
2.0	.9798	.9801	.9803	.9805	.9808	.9810	.9812	.9815	.9817	.9819
2.1	.9842	.9844	.9846	.9848	.9850	.9852	.9854	.9856	.9857	.9859
2.2	.9878	.9879	.9881	.9882	.9884	.9885	.9887	.9888	.9890	.9891
2.3	.9906	.9907	.9909	.9910	.9911	.9912	.9913	.9915	.9916	.9917
2.4	.9929	.9930	.9931	.9931	.9932	.9933	.9934	.9935	.9936	.9937
2.5	.9946	.9947	.9948	.9948	.9949	.9950	.9951	.9951	.9952	.9953
2.6	.9960	.9960	.9961	.9962	.9962	.9963	.9963	.9964	.9964	.9965
2.7	.9970	.9971	.9971	.9972	.9972	.9972	.9973	.9973	.9974	.9974
2.8	.9978	.9978	.9979	.9979	.9979	.9980	.9980	.9980	.9981	.9981
2.9	.9984	.9984	.9985	.9985	.9985	.9985	.9986	.9986	.9986	.9986
3.0	.9989	.9989	.9989	.9989	.9989	.9989	.9990	.9990	.9990	.9990
3.1	.9992	.9992	.9992	.9992	.9992	.9993	.9993	.9993	.9993	.9993
3.2	.9994	.9994	.9994	.9995	.9995	.9995	.9995	.9995	.9995	.9995
3.3	.9996	.9996	.9996	.9996	.9996	.9996	.9996	.9996	.9997	.9997
3.4	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9998	.9998	.9998
3.5	.9998	.9998	.9998	.9998	.9998	.9998	.9998	.9998	.9998	.9998
3.6	.9999	.9999	.9999	.9999	.9999	.9999	.9999	.9999	.9999	.9999
3.7	.9999	.9999	.9999	.9999	.9999	.9999	.9999	.9999	.9999	.9999
3.8	.9999	.9999	.9999	.9999	.9999	.9999	.9999	.9999	.9999	1.0000
3.9	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4.0	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000