Table of the Cumulative Normal Probability distribution F(z).

z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.5000	0.5040	0.5080	0.5120	0.5160	0.5199	0.5239	0.5279	0.5319	0.5359
0.1	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5753
0.2	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
0.3	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
0.4	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
0.5	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
0.6	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
0.7	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
0.8	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
0.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.0	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.0	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
2.1	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
2.2	0.9861	0.9864	0.9868	0.9871	0.9875	0.9878	0.9881	0.9884	0.9887	0.9890
2.3	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
2.4	0.9918	0.9920	0.9922	0.9925	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
2.5	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
2.6	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
2.7	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
2.8	0.9974	0.9975	0.9976	0.9977	0.9977	0.9978	0.9979	0.9979	0.9980	0.9981
2.9	0.9981	0.9982	0.9982	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
3.0	0.9987	0.9987	0.9987	0.9988	0.9988	0.9989	0.9989	0.9989	0.9990	0.9990
3.1	0.9990	0.9991	0.9991	0.9991	0.9992	0.9992	0.9992	0.9992	0.9993	0.9993
3.2	0.9993	0.9993	0.9994	0.9994	0.9994	0.9994	0.9994	0.9995	0.9995	0.9995
3.3	0.9995	0.9995	0.9995	0.9996	0.9996	0.9996	0.9996	0.9996	0.9996	0.9997
3.4	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9998

1.3.2.1 Using the z-score

Assume the you have 50 years of monthly ENSO indices (Z), and that the index is well approximated by a standard normal:

1. Using the table, what is the probability that a randomly chosen month has an ENSO index of exactly $+2$?

2. Using the table, what is the probability that a randomly chosen month has an ENSO index of $+2$ or greater?

3. What is the probability the ENSO index is 1.23 or smaller?

4. What is the probability the ENSO index is 1.23 or greater?

5. What ENSO index ϵ gives $\boldsymbol{Pr}(Z \geqslant \epsilon) = 0.1$?

6. What ENSO index ϵ gives $\boldsymbol{Pr}(Z \leqslant \epsilon) = 0.9$?

7. What ENSO index ϵ gives $\boldsymbol{Pr}(Z \leqslant \epsilon) = 0.1$?

8. What ENSO index ϵ gives $\boldsymbol{Pr}(|Z| \geqslant \epsilon) = 0.1$?

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    0%

2. Using the table, what is the probability that a randomly chosen month has an ENSO index of $+2$ or greater?

3. What is the probability the ENSO index is 1.23 or smaller?

4. What is the probability the ENSO index is 1.23 or greater?

5. What ENSO index ϵ gives $\boldsymbol{Pr}(Z \geqslant \epsilon) = 0.1$?

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   0%

2. Using the table, what is the probability that a randomly chosen month has an ENSO index of $+2$ or greater?
   1-.9772 = 2.08%

3. What is the probability the ENSO index is 1.23 or smaller?

4. What is the probability the ENSO index is 1.23 or greater?

5. What ENSO index ϵ gives $Pr(Z \geqslant \epsilon) = 0.1$?

6. What ENSO index ϵ gives $Pr(Z \leqslant \epsilon) = 0.9$?

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   0%

2. Using the table, what is the probability that a randomly chosen month has an ENSO index of +2 or greater?
   1-.9772 = 2.08%

3. What is the probability the ENSO index is 1.23 or smaller?
   0.8907 = 89.07%

4. What is the probability the ENSO index is 1.23 or greater?

5. What ENSO index ϵ gives $\boldsymbol{Pr}(Z \geqslant \epsilon) = 0.1$?

6. What ENSO index ϵ gives $\boldsymbol{Pr}(Z \leqslant \epsilon) = 0.9$?

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   1-.9772 = 2.08%

3. What is the probability the ENSO index is 1.23 or smaller?
   0.8907 = 89.07%

4. What is the probability the ENSO index is 1.23 or greater?
   1-0.8907 = 10.93%

5. What ENSO index ϵ gives $\boldsymbol{Pr}(Z \geqslant \epsilon) = 0.1$?

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1.3.2.1 Using the z-score

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   0%

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   1-.9772 = 2.08%

3. What is the probability the ENSO index is 1.23 or smaller?
   0.8907 = 89.07%

4. What is the probability the ENSO index is 1.23 or greater?
   1-0.8907 = 10.93%

5. What ENSO index ϵ gives $\boldsymbol{Pr}(Z \geqslant \epsilon) = 0.1$?
   1.285

6. What ENSO index ϵ gives $\boldsymbol{Pr}(Z \leqslant \epsilon) = 0.9$?

7. What ENSO index ϵ gives $\boldsymbol{Pr}(Z \leqslant \epsilon) = 0.1$?

8. What ENSO index ϵ gives $\boldsymbol{Pr}(|Z| \geqslant \epsilon) = 0.1$?

1.3.2.1   Using the z-score

Assume the you have 50 years of monthly ENSO indices (Z), and that the index is well approximated by a standard normal:

1. Using the table, what is the probability that a randomly chosen month has an ENSO index of exactly +2?
   0%

2. Using the table, what is the probability that a randomly chosen month has an ENSO index of +2 or greater?
   1-.9772 = 2.08%

3. What is the probability the ENSO index is 1.23 or smaller?
   0.8907 = 89.07%

4. What is the probability the ENSO index is 1.23 or greater?
   1-0.8907 = 10.93%

5. What ENSO index ϵ gives $\boldsymbol{Pr}(Z \geqslant \epsilon) = 0.1$?
   1.285

6. What ENSO index ϵ gives $\boldsymbol{Pr}(Z \leqslant \epsilon) = 0.9$?
   1.285

7. What ENSO index ϵ gives $\boldsymbol{Pr}(Z \leqslant \epsilon) = 0.1$?

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1.3.2.1 Using the z-score

Assume the you have 50 years of monthly ENSO indices (Z), and that the index is well approximated by a standard normal:

1. Using the table, what is the probability that a randomly chosen month has an ENSO index of exactly +2?
   0%

2. Using the table, what is the probability that a randomly chosen month has an ENSO index of +2 or greater?
   1-.9772 = 2.08%

3. What is the probability the ENSO index is 1.23 or smaller?
   0.8907 = 89.07%

4. What is the probability the ENSO index is 1.23 or greater?
   1-0.8907 = 10.93%

5. What ENSO index ϵ gives $\boldsymbol{Pr}(Z \geqslant \epsilon) = 0.1$?
   1.285

6. What ENSO index ϵ gives $\boldsymbol{Pr}(Z \leqslant \epsilon) = 0.9$?
   1.285

7. What ENSO index ϵ gives $\boldsymbol{Pr}(Z \leqslant \epsilon) = 0.1$?
   -1.285, use symmetry

8. What ENSO index ϵ gives $\boldsymbol{Pr}(|Z| \geqslant \epsilon) = 0.1$?

1.3.2.1 Using the z-score

Assume the you have 50 years of monthly ENSO indices (Z), and that the index is well approximated by a standard normal:

1. Using the table, what is the probability that a randomly chosen month has an ENSO index of exactly $+2$?
   0%

2. Using the table, what is the probability that a randomly chosen month has an ENSO index of $+2$ or greater?
   1-.9772 = 2.08%

3. What is the probability the ENSO index is 1.23 or smaller?
   0.8907 = 89.07%

4. What is the probability the ENSO index is 1.23 or greater?
   1-0.8907 = 10.93%

5. What ENSO index ϵ gives $\boldsymbol{Pr}(Z \geqslant \epsilon) = 0.1$?
   1.285

6. What ENSO index ϵ gives $\boldsymbol{Pr}(Z \leqslant \epsilon) = 0.9$?
   1.285

7. What ENSO index ϵ gives $\boldsymbol{Pr}(Z \leqslant \epsilon) = 0.1$?
   -1.285, use symmetry

8. What ENSO index ϵ gives $\boldsymbol{Pr}(|Z| \geqslant \epsilon) = 0.1$?
   1.645 and -1.645