

Stat Support Activity: Z-score Critical Values

Notes:

- A critical value Z-score (Z_c) is used to calculate margin of error in proportion (%) confidence intervals and is also used in proportion (%) hypothesis tests.
- Critical value Z-scores (Z_c) count the number of standard errors corresponding to 90%, 95% and 99% confidence levels.
- There are three famous Z-score critical values (Z_c) corresponding to 90%, 95% and 99% confidence levels. *(These are the most famous critical values. People working in the Statistics field know these by heart.)*

Problems: Use StatKey to calculate the three famous critical value Z-scores

1.

Go to www.lock5stat.com and click on "StatKey". Under "Theoretical Distributions" click on "Normal". The default mean = 0 and standard deviation = 1 means the computer is set up to calculate Z-scores. Do not change them. Click the button that says "Two-Tail". In the middle upper box, you will see 0.950 (95%). The two numbers at the bottom are famous critical value Z-scores for 95% confidence levels. *(Do you see why the Empirical Rule says that the middle 95% for a normal curve corresponds to "approximately" 2 standard deviations from center? The number you calculated is more accurate.)*

Z-scores for 95% Confidence = \pm ???

2.

Go to www.lock5stat.com and click on "StatKey". Under "Theoretical Distributions" click on "Normal". The default mean = 0 and standard deviation = 1 means the computer is set up to calculate Z-scores. Do not change them. Click the button that says "Two-Tail". Change the middle upper box to 0.9 (90%). The two numbers at the bottom are famous critical value Z-scores for 90% confidence levels.

Z-scores for 90% Confidence = \pm ???

3.

Go to www.lock5stat.com and click on "StatKey". Under "Theoretical Distributions" click on "Normal". The default mean = 0 and standard deviation = 1 means the computer is set up to calculate Z-scores. Do not change them. Click the button that says "Two-Tail". Change the middle upper box to 0.99 (99%). The two numbers at the bottom are famous critical value Z-scores for 99% confidence levels.

Z-scores for 99% Confidence = \pm ???