**Data Analysis In-Class Worksheet #06: Distribution & CI**

Turn in one completed worksheet per week for grading (based on completion).

Student Name _____ TA Checked _____

_____ Attend an office hour to review your worksheet and receive full credit.

**Distributions**

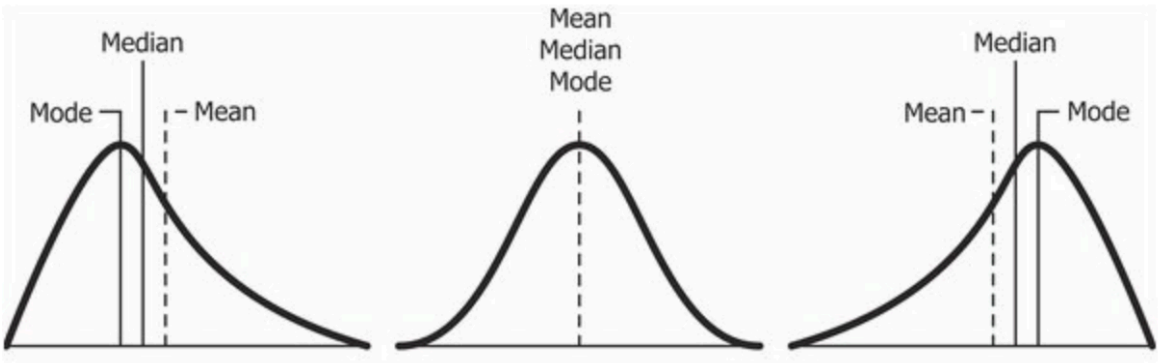
A normal distribution has ___ SDs above the mean and ___ SDs below the mean

Which of the following is an outlier? ⬜ Z = -.3 ⬜ Z = 5 ⬜ Z = 0

Which of these is a negative skew? Skewness = ⬜ -.3 ⬜ 1.2 ⬜ 0

Which of the following graphs shows a positive skew? ⬜ A ⬜ B ⬜ C

A B C




Our class dataset is a(n) _____ of the _____ of all Williamsburg properties.

⬜ sample, population

⬜ population, sample

⬜ case, variable

⬜ independent variable, dependent variable

The _____ test determines if the population from which a sample is drawn is normally distributed or not.

If the result of that test has a p (probability) value of .04, that means

⬜ the population is normally distributed

⬜ the population is NOT normally distributed

If the result of that test has a p (probability) value of .27, that means

⬜ the population is normally distributed

⬜ the population is NOT normally distributed

If we want to convert a non-normal variable into a normal distribution, we can try to take _____ of the variable.

⬜ the natural log

⬜ the Z score

⬜ the standard deviation

⬜ skewness

The binomial distribution is the distribution of _____ trials, which depends on _____, and _____

⬜ random, random number seed, sample size

⬜ Bernoulli, probability, sample size

⬜ Gaussian, Bernoulli, sample size

⬜ normal, Gaussian, probability

**Confidence Interval**

What's a point estimate?

What's an interval estimate?

How does the point estimate differ from an interval estimate?

What is Standard Error?

Which estimate indicates a higher level of confidence?

⬜ I bet that Thomas will get married between 28 and 30 years old

⬜ I bet that Thomas will get married between 18 and 95 years old

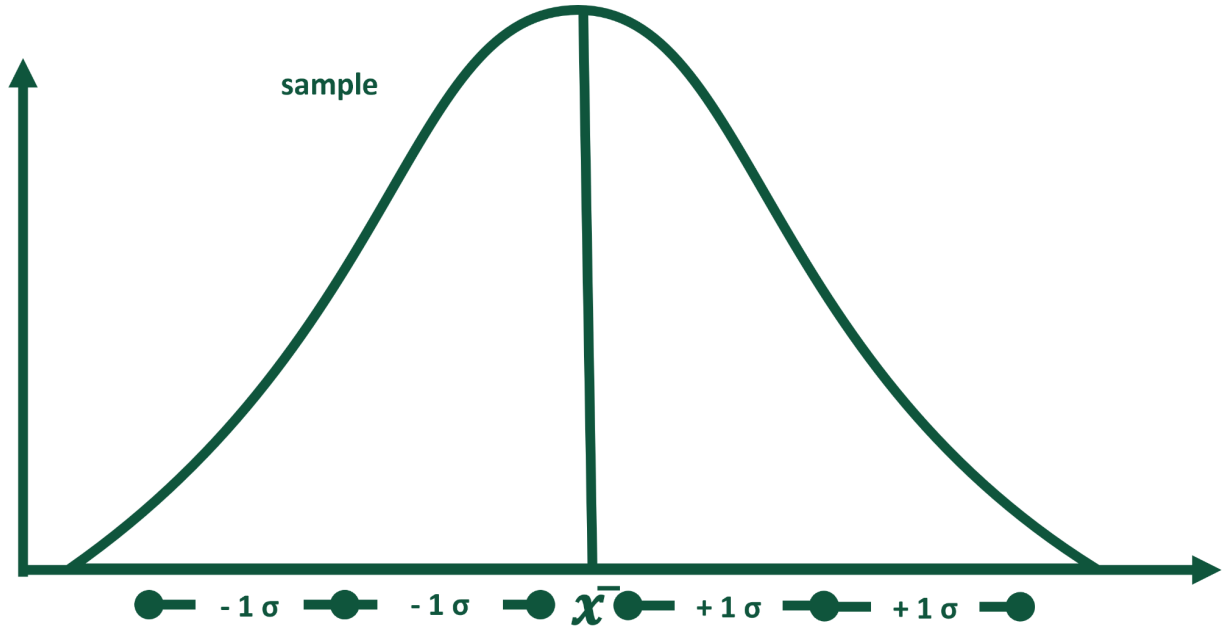
Take a sample of 16 stocks from a large population, with a sample mean return of 5.2%, and a sample standard deviation of 1.5%

The sample size n = _____

The sample mean $\bar{x}$ = _____

The sample SD σ (s) = ___

Mark these values on the sample diagram below.

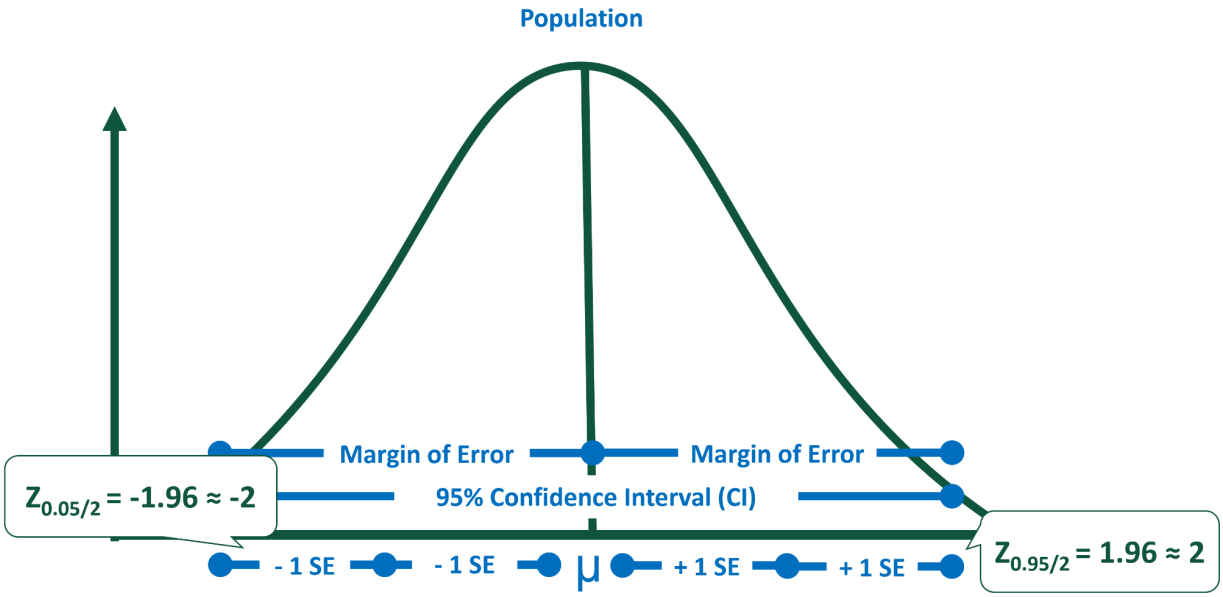



The Standard Error (SE) = ———— = _____

Calculate 95% confidence interval for the population mean μ.

How much is the margin of error?

Mark the values from above on the population diagram below.




Source:
https://financetrain.com/confidence-interval-population-mean-known-population-variance/