\*\*A sample size of 900 is not large enough to conclude that the sampling distribution of p is a normal distribution, when the estimate of the population proportion is .995.
True or false

\*\*If the population is normally distributed then the sample mean is also normally distributed even for small sample size.
True or false

\*\*First a confidence interval is constructed without using the finite population correction factor. Then, for the same identical data, a confidence interval is constructed using the finite population correction factor. The width of the interval with the finite population correction factor is wider than the confidence interval without the finite population correction factor.

\*\*When the population is normally distributed and the population standard deviation *σ* is unknown, then for any sample size n, the sampling distribution of  $\overbar{X}$ is based on the t distribution.

\*\*When the level of confidence and sample proportion  p remain the same, a confidence interval for a population proportion p based on a sample of n=100 will be wider than a confidence interval for p based on a sample of n=400.

\*\*The sample mean, the sample proportion and the sample standard deviation are all unbiased estimators of the corresponding population parameters.

\*\*The manager of the quality department for a tire manufacturing company wants to know the average tensile strength of rubber used in making a certain brand of radial tire. The population is normally distributed and the population standard deviation is known. She uses a Z test to test the null hypothesis that the mean tensile strength is 800 pounds per square inch. The calculated Z test statistic is a positive value that leads to a p-value of .045 for the test. If the significance level (α) is .01, the null hypothesis would be rejected.

\*\*The power of a statistical test is the probability of rejecting the null hypothesis when it is true.