KCTCS Competencies

1. Solve problems including discrete and continuous probability distributions using statistical methods.
2. Identify examples of the different levels of data measurement and recognize several different types of sampling.
3. Construct various types of graphical displays of data.
4. Calculate and apply measures of central tendency, measures of dispersion, and measures of position, including the five-number summary.
5. Apply the basic principles of probability.
6. Identify discrete probability distributions (including the binomial distribution) and calculate means, variances, and standard deviations for them.
7. Calculate z-scores for values in normal distribution, and find critical values for given probabilities.
8. Calculate normal approximations to binomial distributions.
9. Apply the Central Limit Theorem when appropriate.
10. Calculate point and interval estimates for large- and small-sample population means, proportions, and variances (standard deviations).
11. Determine adequate sample size needed to accurately estimate population means, proportions, and variances (standard deviations).
12. Test hypotheses about means, proportions, and variances (standard deviations) for large and small samples.
13. Test the significance of the relationship between two variables.
14. Determine a linear regression equation.
15. Differentiate between correlation and causation