Workshop 7
One-Sample Mean Tests

Name: _____

Date Completed: _____

Provide all solutions, answers and requested outputs after each question.

Questions 1. For a sample of $n = 18$ with mean 54 and standard deviation 5, compute
(a) the estimated standard error, s_M
(b) the 95% confidence interval for the sample.

Question 2. Is mean of a sample of 28 from a sample of size $n = 100$ the same as that of a population with mean equals 26 and standard deviation of 8? Test your hypothesis at the 0.05 significance level.

Question 3. Use the 95% confidence interval for a sampling distribution with $\mu = 150$ and $\sigma = 10$ to test whether a sample with $M = 145$, and $n = 60$ belongs to the population.

Question 4. What conclusion would you draw or reach if the result of your hypothesis testing rejects the null hypothesis at the 0.05 significance level, but your effect size was 0.04?

Question 5. What factor most effects the confidence interval of a sampling distribution and why?

Question 6. Compare the mean, for alpha = 0.05, of the pass4th variable of the ODE.csv dataset against a value of $\mu = 68$. (hint. use s_M to estimate the population parameter)

Question 7. Compare the mean from a sample of $n = 12$, $M = 125$, and $SD = 9$ to a population $\mu = 120$. At the 0.01 significant level is the sample mean greater than 120?

Question 8. Is the mean of sample $X = \{ 2, -3, 1, 4, -2, -1, 5, 2, 3, -1, 0\}$ equals to 0? Test your hypothesis at the 0.01 significance level.

Question 9. The 95% confidence interval for the mean for a sample of size 100 goes from 6.08 to 13.92. What is the mean and standard deviation?
Hint. Find critical value from normal table,
then use formula $CI = mean \pm critical\ value(standard\ error)$ to find standard error,
then use the standard error formula to find standard deviation

Question 10. The population mean is being estimated based on a sample of size 64. The sample mean is 55 and the standard deviation is 15.
(a) Construct CI95
(b) Could the population mean be 50?
(c) What is the effect size for part b?
(d) What are possible values for the population mean?