Elementary Statistics	**Name:**_____
Study Guide 29	**Class:** _____
Due Date: _____	**Score:**_____

Your work must be very similar to my notes, lectures, or videos.

Be Neat, Organized, and No Work $\Leftrightarrow$ No Points

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1. **A local nurse's union has done a study on salary of full-time nurses. The result of this study is summarized in the table below.**

Females	**Males**
$n_1 = 60$	$n_2 = 48$
$\bar{x}_1 = 7050$	$\bar{x}_2 = 6750$
$s_1 =$ Not Given	$s_2 =$ Not Given
$\sigma_1 = 275$	$\sigma_2 = 250$

Table 1:
Monthly Salaries For Nurses

(a) **(3 points) Construct a 98% confidence interval for the difference between population means $\mu_1 - \mu_2$ using data in table 1.**

(a) _____

(b) **(2 points) Compute the margin of error.**

(b) _____

A local newspaper claims that the mean salary of all full-time female nurses is more than the mean salary of all full-time male nurses. Test this claim at $\alpha = 0.02$ by using the data in table 1.

(c) **(3 points) Clearly state H_0 , H_1, identify the claim and type of test.**

H_0 : _____

H_1 : _____

(d) **(3 points) Find all related critical values, draw the distribution, clearly mark and shade the critical region(s).**

(e) **(3 points) Find the computed test statistic and the P-value.**

C.T.S. : _____ **P-Value :** _____

(f) **(2 points) Use non-statistical terminology to state your final conclusion about the claim.**

(f) _____

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2. Given: $n_1 = 50, \bar{x}_1 = 16.735, \sigma_1 = 1.14, n_2 = 45, \bar{x}_2 = 14.384, \sigma_2 = 1.592$

(a) **(2 points) Round given data to one-decimal place, and then complete the following table.**

Sample 1	Sample 2
$n_1 =$	$n_2 =$
$\bar{x}_1 =$	$\bar{x}_2 =$
$\sigma_1 =$	$\sigma_2 =$

(b) **(3 points) Construct 99% confidence interval for the difference between population means $\mu_1 - \mu_2$ using data summarized in the table.**

(b) _____

(c) **(2 points) Compute the margin of error.**

(c) _____

(d) **(2 points) Construct** 90% **confidence interval for the difference between population means** $\mu_1 - \mu_2$ **using data summarized in the table.**

(d) _____

A researcher claims there is no difference between the two population means and wishes to use our summarized data in the table to perform a hypothesis testing between two population means.

(e) **(2 points) Clearly state** H_0 **and** H_1**, and identify the type of test.**

H_0 : _____

H_1 : _____

(f) **(3 points) Using** $\alpha = 0.02$ **significance level, find and name all related critical values, draw the distribution, and clearly mark and shade the critical region(s).**

(g) **(3 points) Find the computed test statistic and the P-value.**

C.T.S. : _____ **P-Value :** _____

(h) **(2 points) Use non-statistical terminology to express your final conclusion about the researcher's claim.**

(h) _____

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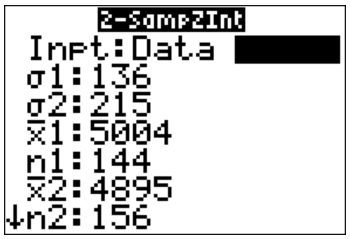
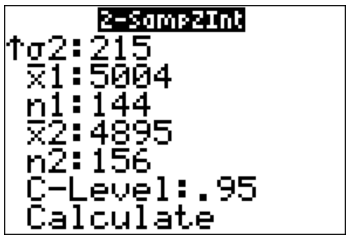
3. **The following calculator displays present the information that a researcher has entered into the calculator in an attempt to find the confidence interval for the difference between two population means.**





(a) **(2 points) Write the confidence interval in proper mathematical notation. Round your final answer to a whole number.**

(a) _____

(b) **(2 points) Find the margin of error.**

(b) _____

(c) **(3 points) Test the claim that the mean of population 2 is smaller than the mean of population 1. Clearly state H_0 , H_1, identify the claim and type of test.**

H_0 : _____

H_1 : _____

(d) **(3 points) Find all related critical values, draw the distribution, clearly mark and shade the critical region(s).**

(e) **(3 points) Find the computed test statistic and the P-value.**

C.T.S. : _____ **P-Value :** _____

(f) **(2 points) Use non-statistical terminology to state your final conclusion about the claim.**

(f) _____