Elementary Statistics	**Name:** _____
Study Guide 25	**Class:** _____
Due Date: _____	**Score:** _____

Your solutions must be consistent with class notes & resources.

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

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1. **CNN claims that average house prices in southern California has dropped and it is now $\$675,000$. Randomly selected 45 houses recently sold in southern California with the mean price of $\$650,000$. Test the claim made by CNN at $\alpha = 0.05$ by using the data collected. Assume that the standard deviation of all house prices in southern California is $\$35,000$.**

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

   H_0 : _____

   H_1 : _____

   (b) **(2 points) Find and name all related critical values, draw the distribution, and clearly mark and shade the critical region(s).**

   (c) **(2 points) Find the computed test statistic and the P-value.**

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

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

   (d) _____

   (e) **(2 points) Choose values for the level of significance α from this list $\{0.01, 0.02, 0.05, 0.08, 0.09, 0.1\}$ that reverses the conclusion you have obtained.**

   (e) _____

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2. A local newspaper claims in an article that the average income for all handymen in the city is more than $\$6000$ per month. A sample of 20 randomly selected handymen had the mean income of $\$6150$ with the standard deviation of $\$400$ per month. Test the claim made by the local newspaper at $\alpha = 0.10$.

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

H_0 : _____

H_1 : _____

(b) (2 points) Find and name all related critical values, draw the distribution, and clearly mark and shade the critical region(s).

(c) (2 points) Find the computed test statistic and the P-value.

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

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

(d) _____

(e) (2 points) Choose values for the level of significance α from this list $\{0.01, 0.02, 0.05, 0.08, 0.09, 0.1\}$ that reverses the conclusion you have obtained.

(e) _____

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3. Find the corresponding $p-$value. Drawing & Shading Required

(a) (2 points) Given: C.T.S. $t = 4.321, df = 15$, and Right-Tail Test.

(a) _____

(b) (2 points) Given: C.T.S. $t = -4.321, df = 15$, and Two-Tail Test.

(b) _____

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4. The scores of 12 randomly selected geometry exams are given below:

98 78 90 70 80 55 78 77 70 80 68 60

(a) (3 points) Find the mean and standard deviation of this sample. Round to a whole number

(a) _____

It has been reported that the mean score of all geometry exams is below 80. Test the validity of the report at $\alpha = 0.02$ by using the data given above.

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

H_0 : _____

H_1 : _____

(c) (2 points) Find and name all related critical values, draw the distribution, and clearly mark and shade the critical region(s).

(d) (2 points) Find the computed test statistic and the P-value.

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

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

(e) _____

(f) (2 points) Choose values for the level of significance α from this list $\{0.01, 0.02, 0.05, 0.08, 0.09, 0.1\}$ that reverses the conclusion you have obtained.

(f) _____

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5. The speed of 8 randomly selected cars on a freeway are given below:

78 70 55 78 70 80 68 60

(a) (2 points) Find the mean and standard deviation of this sample. Round to a whole number.

(a) _____

It has been reported that the mean speed of all cars on the freeway is 75 mph. Test the validity of the report by using the data given above.

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

H_0 : _____

H_1 : _____

(c) (2 points) Find and name all related critical values, draw the distribution, and clearly mark and shade the critical region(s).

(d) (2 points) Find the computed test statistic and the P-value.

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

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

(e) _____

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6. (3 points) Given: C.T.S. $t = 3.875, df = 19$, and Two-Tail Test.
Find the corresponding $p-$value. Drawing & Shading Required

6. _____

Cultivate a good work ethic, and work smarter, not just harder.