

Elementary Statistics	Name: _____
Study Guide 23	Class: _____
Due Date: _____	Score: _____

Your solutions must be consistent with class notes & resources.

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

1. (2 points) What is the purpose of performing hypothesis testing?

1. _____

2. (2 points) What are the main keywords on identifying the null hypothesis?

2. _____

3. (2 points) What are the main keywords on identifying the alternative hypothesis?

3. _____

4. What mathematical symbols do we use to express

(a) (2 points) the null hypothesis H_0 ?

(a) _____

(b) (2 points) the alternative hypothesis H_1 ?

(b) _____

5. (2 points) What kind of error is

(a) (2 points) type I error?

(a) _____

(b) (2 points) type II error?

(b) _____

6. Using the significance level α notation,

(a) (1 point) find $P(H_0 \text{ is valid})$

(a) _____

(b) (1 point) find $P(H_1 \text{ is valid})$

(b) _____

7. (2 points) What are the main methods when performing hypothesis testing?

7. _____

8. (2 points) What are the type of testings when performing hypothesis testing and how do you determine that?

8. _____

9. (2 points) What are the commonly used terminologies to express the final conclusion about the claim?

9. _____

10. Suppose I claim that the mean age of all students at college is 30 years.

(a) (2 points) Express H_0 and H_1 using mathematical notation, and clearly identify the claim and type of testing.

(a) _____

(b) (2 points) Describe a situation of Type I Error assuming H_0 is valid.

11. Suppose I claim that the proportion of all students at college that voted in the last presidential election was below 30%.

(a) (2 points) Express H_0 and H_1 using mathematical notation, and clearly identify the claim and type of testing.

(a) _____

(b) (2 points) Describe a situation of Type II Error assuming H_0 is invalid.

12. (2 points) Suppose I claim that the standard deviation of salaries of all nurses in southern California is more than \$450. Express H_0 and H_1 using mathematical notation, and clearly identify the claim and type of testing.

12. _____

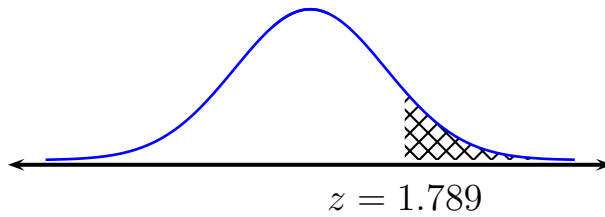
13. (2 points) Suppose I claim that the average monthly income of all students at college is at least \$2000. Express H_0 and H_1 using mathematical notation, and clearly identify the claim and type of testing.

14. (2 points) Suppose I claim that the proportion of all students at college that carpool to the college is at most 25%. Express H_0 and H_1 using mathematical notation, and clearly identify the claim and type of testing.

15. (2 points) What does P-Value represent? Explain.

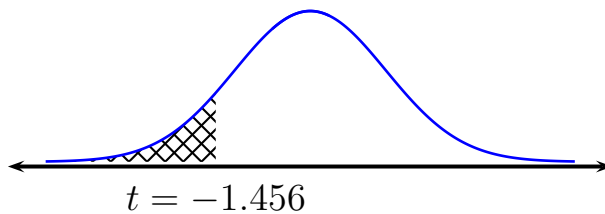
15. _____

16. (2 points) Find the shaded area.



16. _____

17. (2 points) Find the shaded area with $df = 19$.



17. _____

Drawing, Shading, Labeling, and TI Command Required.

18. Find the corresponding p-value for Two-Tail Test with

(a) (3 points) C.T.S. $z = -1.725$.

(a) _____

(b) (3 points) C.T.S. $t = 1.468$ and $df = 17$.

(b) _____

"Action is the foundational key to all success." Pablo Picasso