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

1. 

2. (2 points) What is the major difference between null and alternative hypotheses?

2. 

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

3. 

4. (3 points) What are the main keywords on identifying the alternative hypothesis?

4. 

5. (3 points) What mathematical symbols do we use to express the null hypothesis?

5. 
6. (2 points) What mathematical symbols do we use to express the alternative hypothesis?

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

8. (2 points) What are the type of testings when performing hypothesis testing?

9. (2 points) How do we determine on type of testing to perform?

10. (2 points) What level of significance do we use if none is provided?

11. (2 points) What are the commonly used terminologies to express the final conclusion about the claim?

12. (2 points) Can P–Value be negative or greater than 1? Explain
13. Suppose I claim that the average age of all students at college is 30 years.
   (a) (2 points) Express $H_0$ and $H_1$ using mathematical notation.

   (a) ____________

   (b) (2 points) Describe a situation of Type I Error if in fact my claim is a valid one.

14. 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.

   (a) ____________

   (b) (2 points) Describe a situation of Type II Error if in fact my claim is a false one.

15. Suppose I claim that the standard deviation of salaries of all nurses in southern California is more than $450.
   (a) (2 points) Express $H_0$ and $H_1$ using mathematical notation.

   (a) ____________

   (b) (2 points) Describe a situation of Type II Error if in fact my claim is a false one.
16. Suppose I claim that the average monthly income of all students at college is at least $2000.

(a) (2 points) Express $H_0$ and $H_1$ using mathematical notation.

(b) (2 points) Describe a situation of Type I Error if in fact my claim is a valid one.

17. Suppose I claim that the proportion of all students at college that carpool to the college is at most 25%.

(a) (2 points) Express $H_0$ and $H_1$ using mathematical notation.

(b) (2 points) Describe a situation of Type I Error if in fact my claim is a valid one.

18. Suppose I claim that the standard deviation of ages of all professors in our college is not equal to 7.5 years.

(a) (2 points) Express $H_0$ and $H_1$ using mathematical notation.

(b) (2 points) Describe a situation of Type II Error if in fact my claim is a false one.