NAME: _____

NAME: _____ **Date:** _____

Stats Unit 8 One-Sample Tests' Test

1. Suppose the P-value for a hypothesis test is 0.0304. Using a = 0.05, what is the appropriate conclusion?

   a) Reject the null hypothesis

   b) Reject the alternative hypothesis

   c) Fail to reject the null hypothesis

   d) Fail to reject the alternative hypothesis

2. The weight of the average 6th grade student's backpack (with books in it) is 18.4 lbs. The principal of the school thinks that the backpack does not weight 18.4 lbs. What is the null and alternate hypothesis?

   A) H0 ≠ 18.4
   Ha = 18.41

   B) H0 = 18.4
   Ha > 18.40

   C) H0 = 18.4
   Ha < 18.40

   D) H0 = 18.4
   Ha ≠ 18.4

3. True of False. The null and alternative hypothesis can be the same.

4. In a survey of 526 US businesses, 400 indicated that they monitor employee's web site visits. Is there sufficient evidence that more than 70% of US businesses monitor employees' web site visits? State the null hypothesis

   a) Ho: p = .70, where p is the true proportion of US businesses that indicated they monitor employee web sites.5 participants14 %

   b) Ho: p ≥ .70, where p is the true proportion of US businesses that indicated they monitor employee web sites.0 participants0 %

   c) Ho: p≤.70, where p is the true proportion of US businesses that indicated they monitor employee web sites.

5. Which of the following shows a right-tailed test?

a) Ha: $\mu < 151$

b) H0: $\mu < 150$

c) Ha: $\mu > 152$

d) H0: $\mu > 15$

6. Suppose the P-value for a hypothesis test is 0.101. Using a = 0.10, what is the appropriate conclusion?

a. Reject the null hypothesis

b. Reject the alternative hypothesis

c. Fail to reject the null hypothesis

d. Fail to reject the alternative

7. When do you use a t-value instead of a z-value?

a. When $n < 30$ b. When $n \geq 30$ c. When all of the planets align d. When Ms. Davis said to

8. A _____error occurs if you accept the null hypothesis when it is false.

9. A manufacturer claims that his tires last at least 40,000miles. A test on 25 tires reveals that the mean life of a tires is 39,750 miles, with a standard deviation of 387 miles. Test the Manufacturer's claim at $\alpha = .01$. Show your work.

a. Reject Ho b. Reject Ha c. Fail to reject Ho

d. Fail to reject Ha

10. When p-value is greater than alpha we:

a. Reject Ho b. Fail to reject Ha c. Fail to reject Ho d. Reject Ha

11. In performing a hypothesis test where the null hypothesis is that the μ = 6.9. A random sample of 16 items is selected. The sample mean is 7.1 and the sample standard deviation is 2.4. It can be assumed that the population is normally distributed at α = .05. (Show your work)
    a. Reject Ho b. Reject Ha c. Fail to reject Ho d. Fail to reject Ha

12. Find the critical value for a left tail test with a=.05 and a sample size of 19

13. Find the critical value for $-t0$ and $t0$ when a=.02 and the sample size is 9.

14. It is said that 60% of families own a pet. Of a sample of 95 families, 70 owned pets. Perform a hypothesis test to determine whether the percent of families who own pets is different than 60%. Use α=0.01 for the level of significance. What is the p-value? Round to 4 decimal places.

15. Environmental advocates believe that there is too much Mercury in a town's lake. To test their claim, they took 7 samples of water from the lake and measured the concentration of mercury, in milligrams per cubic meter, in each sample. Assume the population distribution is normal. The sample results were: 1.02, 1.23, 0.91, 1.29, 1.01, 1.35, 1.43. Perform a hypothesis test to determine if the mean concentration of mercury is greater than 1 milligram per cubic meter. Use a 0.05 level of significance.

    a) What type of test should you run?
    a. Z test b. T test c. 1-Prop Z test d. Performance test

    b) What is the P Value?

    c) What is your decision?
    a. Reject the Null
    b. Fail to Reject the Null
    c. Accept the Null

16. Claim: The average weight of males is greater than 53 kg. Ten male students were selected to test this claim. We also set our α=0.01, x=51, s=4.74, n=10, df=9. Step 1: What is the alternative hypothesis?
    a. Ha: μ=53
    b. Ha: μ>53
    c. Ha: μ≠53
    d. Ha: μ≤53
17. What is the t-value for the question above? SHOW YOUR WORK

18. Write the null and alternative hypothesis: The average sale price of a bike is no more than $225.

19. Which of the following symbols can be in the ALTERNATIVE hypothesis? (pick all that apply)
    a. _____≤
    b. _____≥
    c. _____≠
    d. _____=
    e. _____<
    f. _____>
    g. _____α
    h. _____∞
20. Identify whether the following is a null hypothesis or an alternative hypothesis : The average age of grade ten students is 15 years old.

    _____Null ____Alternate