

Name:

Statistics

Date:

Practice Quiz 8-E

1. What does df_N stand for?

df_N stands for _____ in the _____.

2. State the critical value(s) for the following F tests, given sample 1 has a mean of 88.1, a standard deviation of 8.33, and a sample size of 9, and sample 2 has a mean of 90.5, a standard deviation of 7.90, and a sample size of 12. Estimate if needed.

a) one-tailed, σ_1 hypothesized to be larger than σ_2

For $df_N = ______ - 1 = ______ and df_D = ______ - 1 = ______ in the \alpha = ______ F table, F_0 = ______.$

b) one-tailed, σ_1 hypothesized to be smaller than σ_2

For $df_N = ______ - 1 = ______ and df_D = ______ - 1 = ______ in the \alpha = ______ F table, F_0 \approx ______.$

c) two-tailed

For $df_N = ______ - 1 = ______ and df_D = ______ - 1 = ______ in the \alpha = ______ F table, F_0 = ______.$

3. Nora has a heartrate monitor record time between beats (in milliseconds) on a low-stress day and on a high stress day. On the low-stress day, the times are 818, 800, 715, 890, 712, 799, 706, 710, 860, 881, and 704. On the high-stress day, the times are 840, 760, 779, 800, 734, 715, 755, 790, 759, and 803. She will do a two-tailed test.

a) Calculate the sample variances.

The variance for low-stress heartrate is $s^2 = ______^2 = ______ , and the variance for high-stress heartrate is $s^2 = ______^2 = ______.$$

b) Which variance will go in the numerator?

Since this is a two-tailed test, the variance that is _____ goes in the numerator, which in this case is the _____-stress variance. If it were a one-tailed test, the variance that was _____ would go in the numerator.

c) What is the critical value?

For $df_N = ______ - 1 = ______ and df_D = ______ - 1 = ______ in the \alpha = ______ F table, F_0 = ______.$

d) Calculate F .

$F = ______ = ______$

e) Are the data statistically significant?

_____, because the calculated value of F is _____ than _____.

f) State the conclusion, followed by $F_{df, df}$ and a range for p .

Heartrate variance is _____ on low-stress days than on high-stress days, $F_{______, ______} = ______ , p ______ .05.$

g) What would the conclusion have been if your answer to (e) were different?

_____, $F_{______, ______} = ______ , p ______ .05.$

h) What would the conclusion have been if you had done a one-tailed test predicting that heartrate varies more during times of high stress than during times of low stress?

_____, $F_{______, ______} = ______ , p ______ .05.$