

Pledge:

4/18/2006
Dr. Lunsford

MATH171 – Statistical Decision Making
Quiz 8

Name: _____
20 Points Total

I. A nutrition laboratory tests 40 “reduced sodium” hot dogs of Brand A, finding the mean sodium content is 310 mg, with a standard deviation of 36 mg. Please answer the following: (9 points total)

(a) Find a 95% confidence interval for the mean sodium content of this brand of hot dog. You should clearly indicate what type of interval you are finding and all calculator input. (3 points)

(b) What assumptions, if any, have you made to compute the interval in part (a)? (2 points)

(c) Clearly explain the meaning of your interval in the context of this problem. (2 points)

(d) The makers of Brand B hot dogs claim their dogs have 290 mg. of sodium per hot dog on average. Based on your answer in part (a), how does the sodium content of Brand B hot dogs compare to that of Brand A hot dogs, on average? (circle one) (2 points)

- Brand B’s sodium content is significantly less than Brand A’s.
- Brand B dogs’ sodium content is not significantly different from Brand A’s.
- Brand B’s sodium content is significantly more than Brand A’s.

II. As the degrees of freedom of the t-distribution increases, how does each of the following descriptions of the distribution change? (circle one for each) (1 point each – 3 points total)

- Center: smaller larger no change
- Spread: smaller larger no change
- Shape: more normal less normal no change

III. A researcher wants to see whether there is a significant difference in resting pulse rates for men and women. A summary of the data she collects is displayed in the table below. Let μ_m be the mean resting pulse rate for males and μ_f be the mean resting pulse rate for females. Please answer the following: (8 points total)

	Male	Female
Count	28	24
Mean	72.75	72.625
Standard Dev.	5.37225	7.69987

(a) What are the appropriate hypotheses for the researcher to use to test for a significant difference?
(2 points)

(b) Run the test in part (a) clearly indicating which test you are using and why (including any assumptions you may make), all calculator input, the value of the test statistic, and the p-value of the test. (3 points)

(c) What is the conclusion of the test in the context of this problem? (3 points)