Stat Assignment 8A

1) A researcher suggests that male nurses earn more money than female nurses. A survey of 16 male and 20 female nurses reported the data below. Is there enough evidence, at Alpha = .01, to support the claim that male nurses earn more money?

2) A company reported that an insured woman’s average stay in the hospital for normal childbirth is 2.3 days, while an uninsured woman’s average stay is 1.9 days. Both samples were of 16 women and the standard deviation for each was 0.6. At Alpha = .01, test the claim that the means are equal. Then calculate the 99% confidence interval for the difference of the means.

Stat Assignment 8B

1) A basketball coach claims that by taking a “special” vitamin, a weight lifter can increase his strength. Eight players are selected and given a test of strength. After two weeks of training, supplemented by the vitamin, they are tested again. Test the effectiveness of the vitamin at Alpha = .05.

2) Find the 90% confidence interval for the data above.

3) In a sample of 200 Dr’s, 15% thought that the government should control health care. In a sample of 200 nurses, 21% felt the same way. At Alpha = .01, is there a difference in the proportions?

4) Find the 95% confidence interval for the data above.

Stat Assignment 9A

1) A researcher claims that the standard deviation of the ages of cats is smaller than that for dogs. A random sample of 29 cats has a standard deviation of 2.7 years and a random sample of 16 dogs has a standard deviation of 3.5 years. Test the claim at Alpha = .05.

2) A bakery is considering buying one of two new ovens and the oven must maintain a constant temperature during a baking operation. A study was done to compare the variance in temperatures between the two ovens. The variance in temperature before the thermostat restarted the flame in oven #1 was 2.4 for 16 measurements and for oven #2 it was 3.2 for 12 measurements. At Alpha = 0.01, can we conclude that the variances are different?

Stat Assignment 9B

1) A doctor wants to know if there is a relationship between a father’s weight and his first newborn son’s weight. Perform a hypothesis test at Alpha = .01, using table I, and interpret your result. If you reject the null hypothesis, get the regression line and predict the son’s weight if the father’s weight were 180 pounds.

2) An emergency room wants to determine if there is a relationship between outside temperature and numbers of visits during a given time period. Perform a hypothesis test at Alpha = .05, using table I, and interpret your result. If you reject the null hypothesis, get the regression line and predict the number of visits if the temperature is 95 degrees.