**Problem Set #7**

Look at the PS 7 Excel data File.

1. The weight data provides information on the weight of a sample of US males aged 20- 39 years old.

a. Based on this sample, can you conclude (at the 95% confidence level) that the average weight of men in their 30’s is higher than the average weight of men in their 20’s?

b. Can you conclude(at the 95% level) that the standard deviations of weights of men in their 20’s differs from that of men in their 30’s?

c. Can you conclude (at the 95% level) that the standard deviation of weights of men in the 30’s is greater than 15?

d. Can you conclude (at the 95% level) that the average weight of men in either their 20’s or 30’s (use the entire sample) is greater than 120?

2. Grouping the weights of men from the weight data gives us the following tabular result:

|  |  |
| --- | --- |
|  |  |
|  |  |
| Count of Weight |  |
| Weight | Total |
| 90-120 | 13 |
| 120-150 | 20 |
| 150-180 | 24 |
| 180-210 | 17 |
| 210-240 | 11 |
| 240-270 | 12 |
| 270-300 | 3 |
| Grand Total | 100 |

One of your colleagues has hypothesized that weights of men are uniformly distributed. Using the data presented in the table above, perform a statistical test to investigate whether or not this hypothesis should be rejected.

**Problems 3 – 8 use the accounting professionals data set.**

1. Use a 95% confidence (significance) level to test the null hypothesis that the average number of years of service is the same for men and women. What is the p-value for the test performed. For what levels of significance would you reject the null hypothesis?
2. Test the null hypothesis (using the accounting professionals data set) that the average years of undergraduate study is the same for men and women, using a 95% confidence level.
3. Test the null hypothesis that the variance in years of service is the same for men and women (using the accounting professionals data set).
4. Test the null hypothesis that the variance in years of service for females is greater than 14.
5. Test the null hypothesis that the variance in years of service for males is less than 70.

8. Perform a chi-square test of independence to

1. Determine if age-group is independent of having a graduate degree,
2. Determine if years of service is independent of gender.