MATH 2240 – Problem Set #6   Due Wednesday, October 17

1. Read the setup to problem 10.40 (p. 526).

    (a) Based on the study, what would you say is the population of interest? What are the experimental
        units? What is the response variable? What is the independent variable? What are the levels of
        this factor? Is this an observational or a designed study? Explain.

    (b) What assumptions must be met in order to use a 1-way ANOVA for this study? Based on
        descriptive statistics, are these assumptions reasonable in this case?

    (c) Download the DRINKS data set from the course webpage and use Minitab to perform a 1-way
        ANOVA. Show all five steps and be specific in your conclusion. Which means would you guess are
        different? Explain.

2. Read the setup to problem 10.41 (p. 526).

    (a) Based on the study, what would you say is the population of interest? What are the experimental
        units? What is the response variable? What is the independent variable? What are the levels of
        this factor? Is this an observational or a designed study? Explain.

    (b) What assumptions must be met in order to use a 1-way ANOVA for this study? Based on
        descriptive statistics, are these assumptions reasonable in this case?

    (c) Download the COUGH data set from the course webpage and use Minitab to perform a 1-way
        ANOVA. Show all five steps and be specific in your conclusion. Which means would you guess are
        different? Explain.

    (d) Explain how Minitab got the three degrees of freedom in the ANOVA table. Verify the MS column
        and the test statistic (F-value), too