BUS 310, Quiz #1, Spring 2018

Name **KEY**

Section _____

Instructions: This quiz is to be completed entirely in class. You may not use cell phones, and you may only access internet resources you are specifically directed to use. Go to Blackboard and open the data file posted under Quiz #1. Use it to answer the following questions. **Place your answers to the bolded questions directly on this page.** You must submit the Excel file you used to perform calculations into the Quiz #1 folder in Blackboard, and submit the paper version of the quiz to the instructor to be eligible to receive full credit.

1. Wiley Wiz is a mutual fund manager trying to decide how to divide up to $12 million between domestic and foreign stocks. Domestic stocks have been returning 11% per year and foreign 17%. Naturally, Wiley would like to maximize the annual return from his investments. Still, he wants to exercise some caution. No more than $10 million of the fund should go into domestic stocks, and not more than $7 million into foreign stocks. Also, at least half as much should be invested in foreign as domestic, and at least half as much in domestic as foreign to maintain some balance. Formulate a solve a mathematical model for this situation using Solver. Use Desmos or another online graphing program to plot the feasible region and solution. **State the amount of money to be invested in each type of stock, and state the maximum annual return.**

   Domestic $5 million
   Foreign $7 million
   Annual Return $1,740,000

2. Consider the 500 shipments in the data set as the sampling frame. Select a simple random sample of 15 shipments and use that sample to calculate the **mean defective proportion per shipment**.

   .40 or 40%   answers will vary

3. Consider the data set provided to be the sample. Calculate the proportion of the sample that uses Colgate, and the proportion that uses Mentadent. Use that information to **calculate a 95% confidence interval each brand**. **Does it suggest that there is a difference between the proportion of the population that use Colgate vs. the proportion of the population that uses Mentadent? Explain.**

   Colgate (10.48%, 20.52%)
   Mentadent (8.76%, 18.24%)

   the intervals overlap so there is no meaningful
   difference between them

Submit your completed Excel file to Blackboard, and submit your paper quiz to your instructor in class.