MTH 154, Quiz #10, Spring 2019   Name _____ KEY _____

Instructions: You must show all work to receive full credit for the problems below. You may use Excel where appropriate. Any datasets needed will be posted on Blackboard with the quiz file, and you should submit such work along with your quiz. Round answers to two decimal places unless other instructions are given in the problem.

1. Use the data in **154quiz10data.xlsx** to create a pivot table of gender and buy category. Then use the table to answer the questions that follow.

   a. What is the probability that a randomly selected person from the data set is a woman?

   $$234/400 = 117/200 = 58.5\%$$

   b. What is the probability that the person made a purchase in the high buy category?

   $$120/400 = 3/10 = 30\%$$

   c. What is the probability that the person was both a woman and made a purchase in the high buy category?

   $$77/400 \qquad = 19.25\%$$

   d. What is the probability that the person did not make a purchase in the high buy category?

   $$1 - 120/400 = 280/400 = 7/10 = 70\%$$

   e. What is the probability of either being a woman or making a purchase in the high buy category?

   $$\frac{234 + 120 - 77}{400} = \frac{277}{400} = 69.25\%$$

   f. What is the probability of being a woman given they've made a purchase in the high buy category?

   $$77/120 = 64.2\%$$

   g. What is the probability of being in the high buy category given that the person is a woman?

   $$77/234 = 32.9\%$$