MTH 154, Quiz #8, Spring 2023   Name _____

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 Canvas 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. Do not say "see Excel". Paste your answers into the quiz.

1. Use the data in **154quiz8data.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?

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

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

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

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

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

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

2. Consider an unfair coin with the probability of getting heads at 78%. Create a simulation in an Excel sheet that models the unfair coin flips using a RAND function and an IF function to determine if the flip is heads to tails. Model 25 flips and count the number of Heads that appear.

3. If we wanted to model a standard die roll in Excel, write the function we would use below.