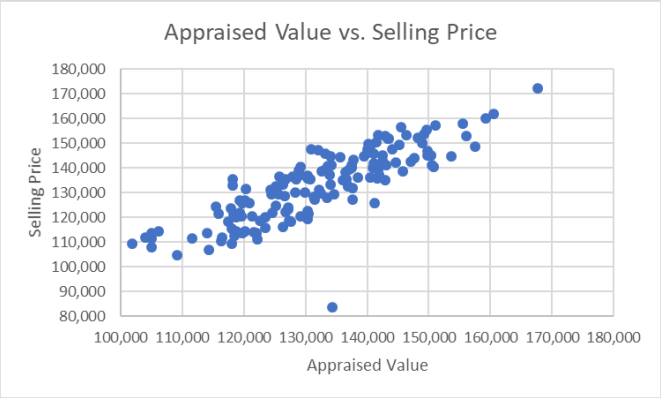
MTH 154, Quiz #10, Spring 2023 Name _____

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 sequence of values $6.5, 7.8, 9.1, 10.4, 11.7, 13, 14.3, \ldots$ to determine if the sequence is a linear relationship or another kind. If linear, what is the slope (common difference)?

2. The linear equation $y = 0.017x - 0.0848$ models the relationship between the price of gold x and the price of silver y. Interpret the slope in the context of the problem. The intercept cannot be interpreted. Explain why not.

3. A scatterplot is shown. Does there appear to be a strong relationship between the variables? If so, is the relationship linear or nonlinear?



4. Use the data in the Excel file **154quiz10data.xlsx** to construct a scatterplot that predicts selling price from appraisal value. Be sure to label the graph appropriately. Find the linear regression equation, correlation value (r) and coefficient of determination (R^2). Use this information to answer the questions that follow.
   a. Write your regression equation.

b. Interpret the slope of the equation in context.

c. If possible, interpret the y-intercept. If it cannot be interpreted in context, explain why not.

d. What is the correlation? Is this a strong, moderate or weak correlation? Is it positive or negative?

e. What is the R^2 value?

f. Interpret the coefficient of determination in the context of the problem.

g. Use the equation to predict the selling price of a house appraised for $180,000 if the trend continues.