Portfolio Unit 12

**Section 1: Vocabulary: Define each term**

1. Joint Frequency:
2. Marginal Frequency:
3. Relative Frequency (probability):
4. Correlation Coefficient:
5. Residuals:
6. Interpolation:
7. Extrapolation:

**Section 2: Formulas/Equations/Rules (Show the process)**

1. To find the residual, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Section 3: Key methods and concepts**

1. Find the following based on the two-way frequency table below
2. Number of students who are girls and speaks French.\_\_\_\_\_\_\_\_\_
3. Number of students who speaks German?\_\_\_\_\_\_
4. Total number of student’s surveyed.\_\_\_\_\_\_\_\_\_\_
5. The probability of a student who is a female and speaks Spanish.\_\_\_\_\_\_\_\_\_\_\_\_\_
6. The relative frequency of a student who is a male and speaks French\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. The percentage of students who are boys\_\_\_\_\_\_\_\_\_\_\_\_
8. The percentage of students who speak French\_\_\_\_\_\_\_\_\_\_\_\_
9. The probability of a student speaking Spanish given that the student is a male\_\_\_\_\_\_\_\_\_\_
10. The percentage of girls who speak German\_\_\_\_\_\_\_\_\_\_

1. The percentage of students scoring 85 or better on a mathematics final exam and an English final exam during a recent school year for seven schools is shown in the table below.

  ****

1. Use the table above to make a scatter plot to represent these data.
2. Write the linear regression equation for these data, rounding all values to the *nearest hundredth*.
3. State the correlation coefficient of the linear regression equation, to the *nearest hundredth*. Explain the meaning of this value in the context of these data.
4. Draw the line of best fit.
5. Using the line of best fit, predict the percentage of students scoring an 85 or better in English if 55% of students scored 85 or better in math, rounded to the nearest integer.



1. Use the line of best fit equation to find the predicted values to the nearest integer, and the residuals for each data point in the above table.
2. Sketch a plot of the residuals below.
3. Is the linear model the best model to represent this situation? Explain