Use JMP to answer the following questions. Instructions for how to find the relevant values in JMP are included in Chapter 4 of your Lecture Guide.

1. A company wishes to study the relationship between sales volume and the amount of money spent on advertisements. The following data are collected.

Advertising (thousand dollars)	**Sales Volume** (thousand dollars)
100	400
200	550
300	800
400	1200

(a) Identify the **explanatory** and **response** variables.

(b) Find and interpret the **correlation coefficient** in context of the problem.

(c) Using **Table II** in Chapter 4 of your Lecture Guide, determine whether there is a linear relationship between the two variables.

(d) What is the least-squares **regression equation**?

(e) Interpret the **slope** of the regression equation.

(f) Does the **y-intercept** of the regression equation have a valid interpretation in this context? If so, interpret it. If not, explain why.

(g) Find the **predicted** sales volume when \$400,000 are spent on advertising.

(h) Find the **residual** for when \$400,000 are spent on advertising.

2. An economist wants to determine the relationship between one's FICO score (a measure of credit score) and the interest rate of a 36-month auto loan. The data in the table below represent the interest rate (in percent) that a bank might offer on a 36-month auto loan for a sample of various FICO score.

FICO Score	545	595	640	675	705	750
Interest Rate (%)	18.982	17.967	12.218	8.612	6.680	5.150

(a) Identify the **explanatory** and **response** variables.

(b) Find and interpret the **correlation coefficient** in context of the problem.

(c) Using **Table II** in Chapter 4 of your Lecture Guide, determine whether there is a linear relationship between the two variables.

(d) What is the least-squares **regression equation**? Round values to three decimal places.

(e) Interpret the **slope** of the regression equation.

(f) Does the **y-intercept** of the regression equation have a valid interpretation in this context? If so, interpret it. If not, explain why.

(g) Find the **predicted** sales volume for someone with a FICO score of 640.

(h) Find the **residual** for someone with a FICO score of 640.