

Unit 3 Summary Lab Assignment

Name: _____

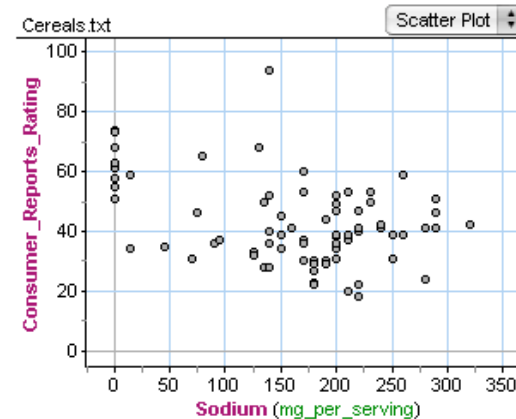
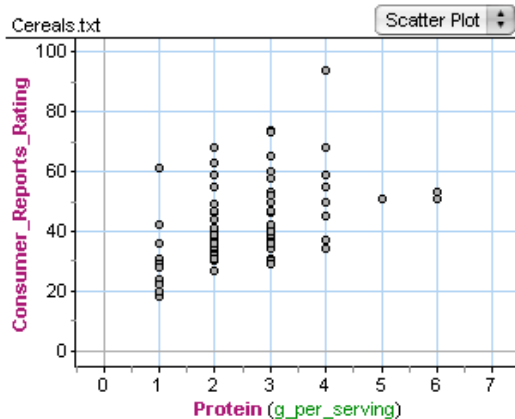
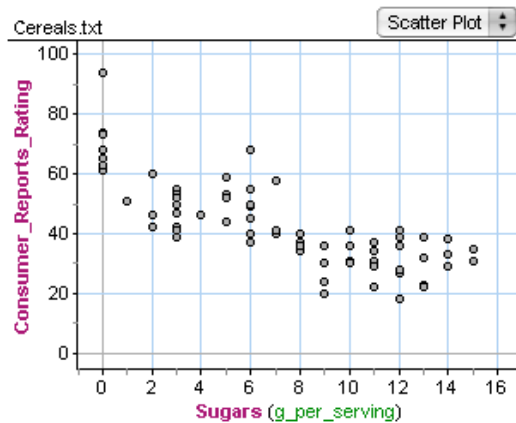
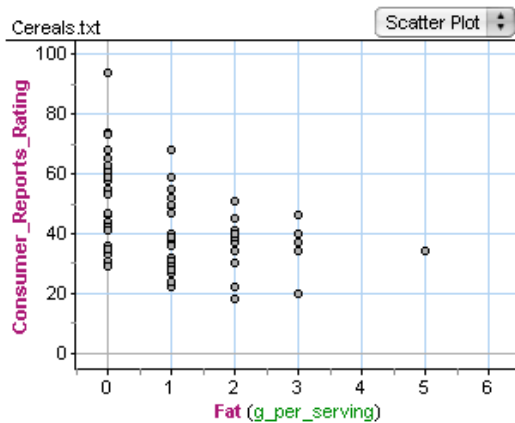
Learning Goal:

- Use a scatterplot to display the relationship between two quantitative variables. Describe the overall pattern and striking deviations from the pattern.
- For a linear pattern, use the least squares regression line to summarize the overall pattern and to make predictions.

Specific Learning Objective:

- Read and interpret scatterplots
- Describe the pattern in a scatterplot as positive or negative association, if appropriate.
- Identify the rate of change and initial value for predicted values in a least squares regression line.
- Interpret the rate of change (slope) and initial value (y-intercept) for regression lines.

- 1) These scatterplots show the relationship between various ingredients and Consumer Report Ratings for some breakfast cereals. Consumer Reports is a non-profit group that rates products to help consumers make smart purchases. Their rating system is based on an undisclosed formula.



Referring to the scatterplots on the previous page:

- a) Captain Crunch has the lowest *Consumer Reports* rating of the 77 cereals in the data set. How much fat is in a serving of Captain Crunch?
- b) In this set of 77 cereals, Product 19 has the most sodium in a serving. What is the *Consumer Reports* rating for Product 19?
- c) All-Bran Extra Fiber is the cereal with the highest rating. How much sugar, fat, and sodium are in a serving of All-Bran Extra Fiber?
- d) Which ingredients (fat, sugar, protein, sodium) are positively associated with Consumer Report Ratings? Which are negatively associated? Which have no association?
- e) Do you think fiber would be positively or negatively associated with Consumer Report Ratings? Why?

- 2) In 2008, a statistics student gathered data on the monthly car insurance premiums paid by students and faculty at Los Medanos College. Her regression line is $\hat{y} = 97 - 1.45x$, where \hat{y} is the predicted monthly premium and x is years of driving experience.

Interpret the y-intercept **and** the slope for the regression line using the context for the data. In other words, your interpretations should refer to years of driving experience and monthly car insurance premiums.

Y-intercept:

Slope:

