Unit 3 Summary Lab Assignment

Name: _____

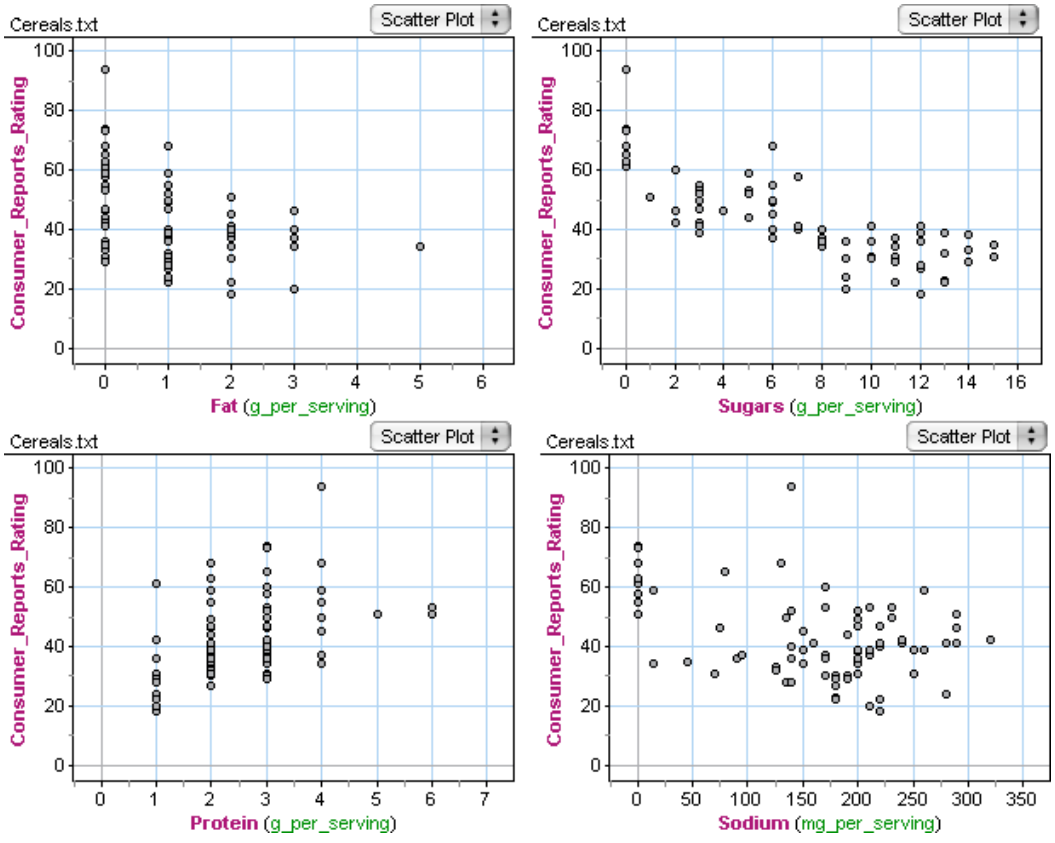
Learning Goal:

- 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 $y = 97 - \hat{1}.45\,x$, where *y-hat* 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: