Name: _____

Stat 101
Summer 2023 Session 1
Dr. Lily Yen

Activity 8-1
Show all your work

Number: _____

Signature: _____

Score: ___/10

State all spreadsheet functions used.

Problem 1: The spreadsheet under Activity 8 in eLearn contains data on Starbucks food menu regarding the number of calories along with fat, carbohydrates, fibre, and protein in grams in each food item.

Make a scatterplot with calories on the x-axis and fat on the y axis.

a. According to the scatterplot, describe the relationship between the number of calories and the amount of fat (in grams) that Starbucks food menu items contain.

b. In this scenario, identify the explanatory and the response variables.

c. Why might we want to fit a regression line to these data?

d. Do these data meet the conditions required for fitting a least squares line?

e. Use the spreadsheet functions to carry out a regression analysis. From the summary report, answer the following.

   (1) Write out the linear model.
   (2) Interpret the y-intercept.
   (3) Interpret the slope.
   (4) Interpret R^2.
   (5) Calculate the correlation coefficient.

f. Do the data provide strong evidence that an increase in calories is associated with an increase in fat? State the null and alternative hypotheses, report the p-value, and state your conclusion.

Score: /10