

Preparation for Inference for Regression AND REVIEW of Chapter 3 for AP Exam and Final Exam!!Tipping at a buffet

Do customers who stay longer at buffets give larger tips? An AP statistics student who worked at an Asian buffet, decided to investigate this question for her second semester project. While she was doing her job as a hostess, she obtained a random sample of receipts, which included the length of time (in minutes) the party was in the restaurant and the amount of the tip (in dollars). Do these data provide convincing evidence that customers who stay longer give larger tips? Here is the data:

Time (minutes)	Tip (dollars)
23	5.00
39	2.75
44	7.75
55	5.00
61	7.00
65	8.88
67	9.01
70	5.00
74	7.29
85	7.50
90	6.00
99	6.50

Enter the data into your calculator (L_1 for Time; L_2 for Tip)

Make a scatterplot (Stat-Plot-first graph- L_1 L_2 - zoom 9)

Describe the relationship between the time at the restaurant and the tip, based on the scatterplot.

Now using your calculator, write the equation of the least-squares regression line (Stat-Calc-8- L_1 , L_2 -var-y-vars-enter-enter).

Predict the tip for 61 minutes (How does that prediction compare to the actual tip?).

From the LSRL, write the value of the y-intercept and interpret the y-intercept in context.

From the LSRL, write the value of the slope and interpret the slope in context.

From the calculator, write the value of the correlation coefficient r , and interpret in context.

From the calculator, write the value of the coefficient of determination r^2 and interpret in context.

Find the residual for 61 minutes (Res = observed – predicted)