In-class Exercise 12.1 A study is conducted using only Boeing 737s traveling 500 miles on

comparable routes during the same season of the year. Can the number of passengers predict the

cost of flying such routes? It seems logical that more passengers result in more weight and more

baggage, which could, in turn, result in increased fuel consumption and other costs. The data are

the costs and associated number of passengers for twelve 500-mile commercial airline flights

using Boeing 737s during the same season of the year. Based on the results given below, answer

the following questions.

a) Check the conditions for a hypothesis test and CI of slope.

b) Test to see if there is a significant relationship between the 2 variables.

c) Construct and interpret a 95% CI for the slope.

d) Suppose a flight gets 75 passengers. What would their expected GPA be? Is this a good

estimate? Explain in terms of R-sq.









SUMMARY OUTPUT

*Regression Statistics*

Multiple R 0.94820033

R Square 0.89908386

Adjusted R Square 0.88899225

Standard Error 0.17721746

Observations 12

ANOVA

*Df SS MS F Significance F*

Regression 1 2.79803 2.79803 89.092179 2.7E-06

Residual 10 0.31406 0.03141

Total 11 3.11209

*Coefficients Standard Error t Stat P-value*

Intercept 1.56979278 0.33808 4.64322 0.0009175

Number of Passengers 0.0407016 0.00431 9.43887 2.692E-06