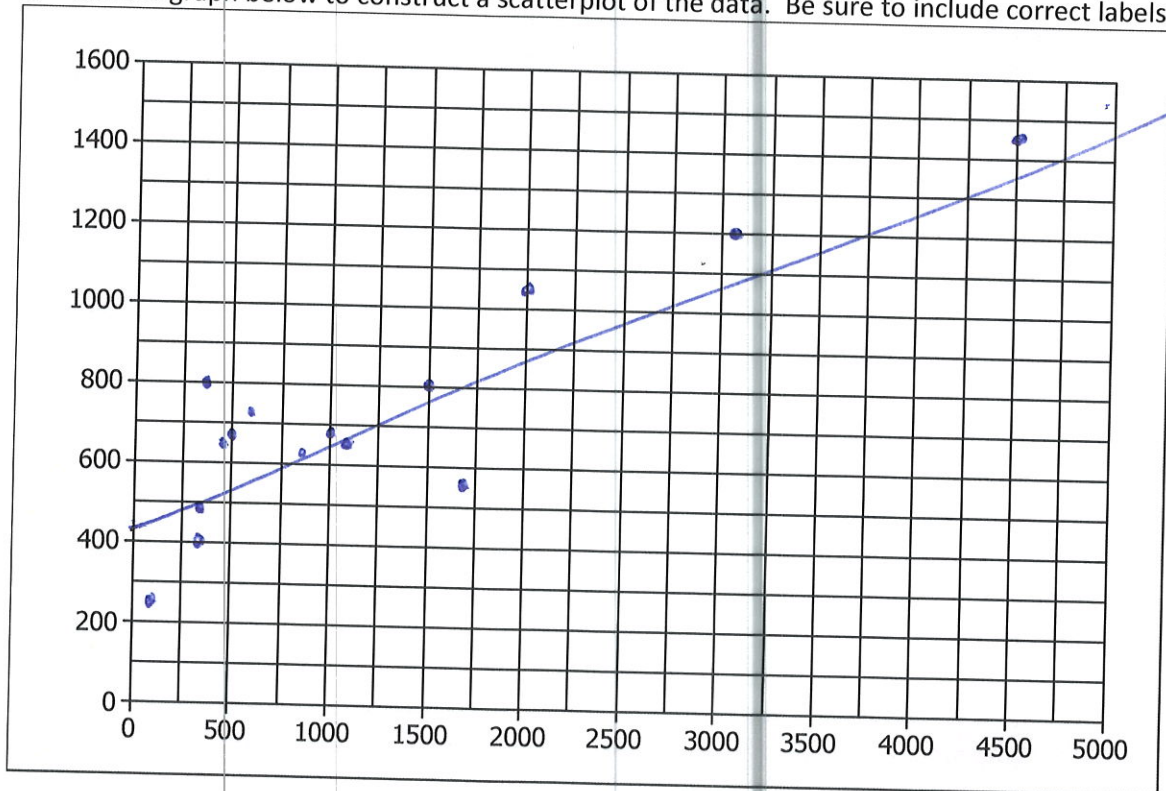1. Is the price of an airline ticket related to the number of miles traveled? The mileage between Washington, DC and some selected cities is given below along with the average price of an airline ticket from Washington to that city:

Mileage	4500	1000	2000	300	350	500	600	850
Price	1450	690	1050	400	800	670	725	620

Mileage	1700	330	1500	450	100	3100	1100
Price	550	480	800	650	250	1200	650

a. Use the graph below to construct a scatterplot of the data. Be sure to include correct labels.

b. Find the least-squares regression line for the data, i.e. $y = b_0 + b_1 x$, find both b_0 and b_1 and create an equation using these values.

$y = ax + b$

$a = .223676...$

$b = 458.255...$

$r^2 = .781...$

$r = .8840...$

$y = .224x + 458.255$

c. What is the correlation coefficient for this data? Do you think the line is a good fit? Why or why not?

$r = .884$

the fit is pretty good; the correlation is fairly high

d. When should a regression model be used to make a prediction? When should it not be used to make a prediction?

When the variable value for the prediction falls within the range of the original data (or very nearby). It should not be used when the value makes no physical sense when applied, or if its well-outside the range of the data that created the model.

2. Be prepared to discuss the article at http://pareonline.net/getvn.asp?v=8&n=2.