

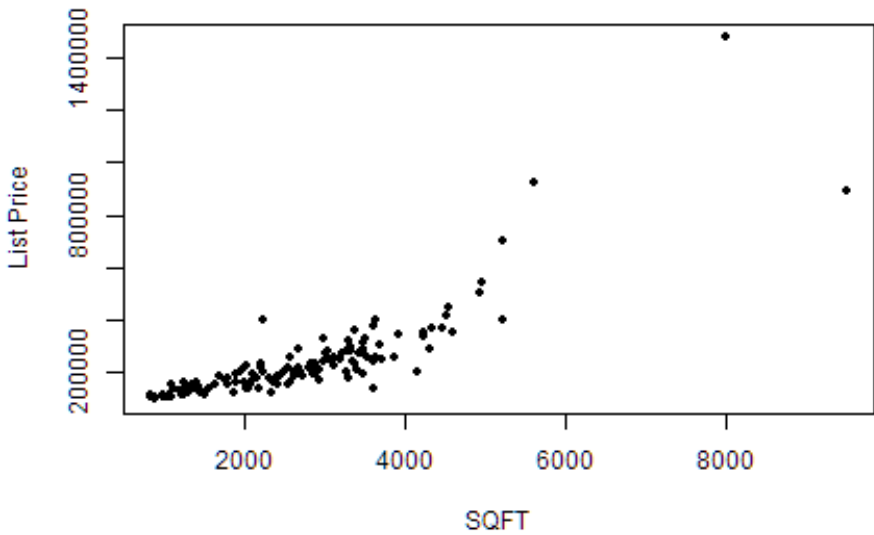
Lesson 21: Describing Bivariate Data; Scatterplots, Correlation, and Covariance

Homework

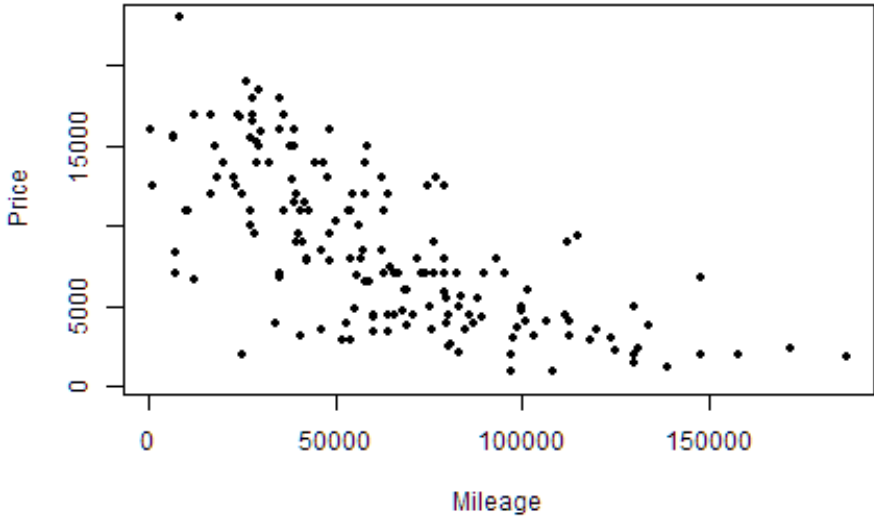
Solutions

Please note that the steps show rounded numbers, but that the final answers to the problems are calculated without rounding.

Problem	Part	Solution
1	-	Linear, moderate negative association.
2	-	Linear, strong positive association.
3	-	Linear, moderate positive association.
4	-	Nonlinear.
5	-	Linear, moderate positive association.
6	-	Linear, weak positive association.
7	-	c. There is a strong negative linear relationship between the variables.



- 8 -
- 9 - Answers will vary. One plausible answer is that it does appear to be linear, with a strong positive association. You may also see slight curve to the data.
- 10 - $r = 0.843$
- 11 - If in answer to question 9 you said that the data appear to show a strong positive association that is supported by $r = 0.843$ because it is a positive number and it is close to 1.
- 12 - $S_{xy} = 178,852,397$

Problem	Part	Solution
 A scatter plot showing the relationship between Mileage (x-axis) and Price (y-axis). The x-axis ranges from 0 to 150,000 with major ticks every 50,000. The y-axis ranges from 0 to 15,000 with major ticks every 5,000. The data points are black dots. There is a clear downward trend, indicating a negative correlation. The points are more densely packed at lower mileages and become more sparse as mileage increases. A few outliers are visible at low mileages with high prices.		
13	-	
14	-	Answers will vary. One plausible answer is that it does appear to be linear, with a moderate negative association.
15	-	$r = -0.687$
16	-	If in answer to question 14 you said that the data appear to show a moderate negative association that is supported by $r = -0.687$ because it is a negative number and it is right in between 0 and -1.
17	-	$S_{xy} = -126,615,794$