Lesson 4-1: Construct and Interpret Scatter Plots

1. Sample answer: Each point on a scatter plot shows the relationship between two quantities in one set of numerical data. The set of points is a visual model of the patterns in data, including clusters, gaps, and outliers.

2. Sample answer: The scatter plot could show 0 to 30 points counting by 3s for the y-axis, and 0 to 10 hours counting by 1s for the x-axis.

3. No; Sample answer: A scatter plot may show a pattern or no pattern, and still include any or none of these features.

4. Sample answer: For the x-axis, she could use a scale of 0-10 and count by 1s. For the y-axis, she could use a scale of 50-70 and count by 2s.

5. Sample answer: The cluster may be because it is summer. The outlier may be because it is cold.

6. y-axis: Lap 2 (min)
   x-axis: Lap 1 (min)

7. a. There is a cluster between the prices of $10 and $25 and between 10 and 20 books sold. The number of books sold is greatest between 10 and 20 and the cost of most books is between $10 and $25.

   b. Sample answer: The scatter plot gives a visual model of how the data relate to each other. Most of the books sold cost between $10 and $25. The two outliers represent books that sold many more copies than any of the other books in the cluster.

8. a. See students' work.

   b. (12, 3) and (6, 36)

   c. Sample answer: For (6, 36), June may be busy, because there are more tourists. For (12, 3), the museum might close for holidays in December.

9. a. He switched the axes labels and the x- and y-values.

   b. Sample answer: The number of painters and sculptors seems to increase together.

   c. Sample answer: (11, 6) and (20, 45). The point at (11, 6) represents a school with a much smaller enrollment than the other schools. The point at (20, 45) represents a school with a greater-than-usual difference between the two types of students enrolled.

10. A, B, D

11. B