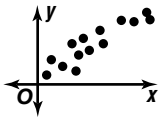
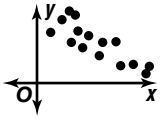
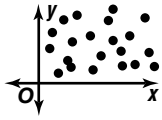
NAME _____ DATE _____ PERIOD _____

5-7 Statistics: Scatter Plots and Lines of Fit *(Pages 298–305)*

To determine if there is a relationship between a set of data, we can display the data points in a graph called a scatter plot. In a **scatter plot**, the two sets of data are plotted as ordered pairs in the coordinate plane.

Types of Correlations	 In this graph, *x* and *y* have a **positive correlation**. As *x* increases, *y* also increases.	 In this graph, *x* and *y* have a **negative correlation**. As *x* increases, *y* decreases.	 In this graph, *x* and *y* have *no correlation*. In this case; *x* and *y* are not related and are said to be *independent*.

You can sometimes draw a line, called a **line of fit**, that passes close to most of the data points.

Try These Together

Explain whether a scatter plot for each pair of variables would probably show a* positive, negative, *or* no *correlation between the variables.

1. the number of cars on a freeway and the amount of time for a commute

2. a person's weight and the number of siblings they have

HINT: As one variable increases, does the other also increase?

Practice

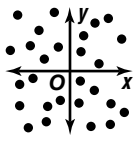
Explain whether a scatter plot for each pair of variables would probably show a positive, negative, or no correlation between the variables.

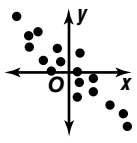
3. the number of extra-curricular activities and the amount of free-time

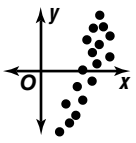
4. the time a student's homework will take and the weight of their backpack

5. the amount of time concert tickets are on sale and the number of tickets left

Determine whether a line of fit should be drawn for each set of data graphed below.

6. 

7. 

8. 

9. **Standardized Test Practice** What type of correlation is there between the number of hours spent talking long distance on the telephone and the amount of the telephone bill?

A positive correlation **B** no correlation

C negative correlation **D** need more information

Answers: **1.** positive **2.** no correlation **3.** negative **4.** positive **5.** negative **6.** No, *x* and *y* do not seem to be related. **7.** Yes, *x* and *y* have a negative correlation. **8.** Yes, *x* and *y* have a positive correlation **9.** A