



UNDERSTAND

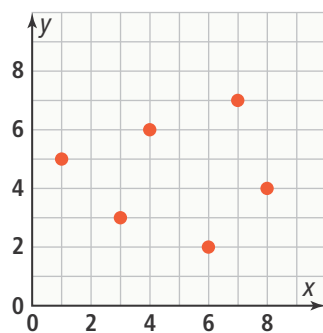
- Reason** Can you use any two of the given data points in a scatter plot to write an equation for a trend line? Explain.
- Look for Relationships** Describe the slope of a trend line that models the data in a scatter plot with positive correlation. Describe the slope of a trend line that models the data in a scatter plot with negative correlation.
- Error Analysis** Describe and correct the error a student made in describing the association of the data in the table.

<i>x</i>	19	18	17	17	15	13	11
<i>y</i>	3	6	7	8	10	11	12

The data in the table show positive association because *y* is increasing.



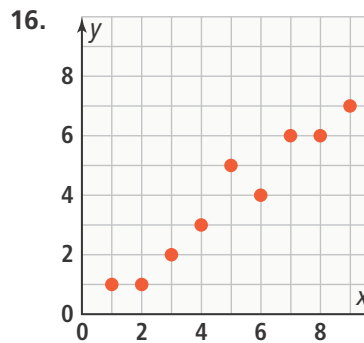
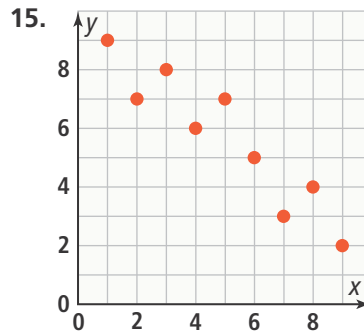
- Higher Order Thinking** Would a trend line be a good fit for these data? Explain.



- Reason** Describe a set of data that has neither a positive nor a negative association, but that does have a valid trend line.
- Mathematical Connections** How could finding the *y*-intercept of a trend line for a data set help you determine the usefulness of the trend line as a model?

PRACTICE

Describe the type of association each scatter plot shows. SEE EXAMPLE 1



For each table, make a scatter plot of the data. Describe the type of association that the scatter plot shows. SEE EXAMPLE 2

17.

<i>x</i>	<i>y</i>
2	4
3	4
3	6
5	8
6	10

18.

<i>x</i>	<i>y</i>
1	9
2	7
5	3
6	2
6	1

19.

<i>x</i>	<i>y</i>
3	1
4	9
7	2
8	8
10	3

For each table, make a scatter plot of the data. Draw a trend line and write its equation.

SEE EXAMPLES 3 AND 4

20.

<i>x</i>	<i>y</i>
2	3
4	6
5	5
7	7
8	9
8	8

21.

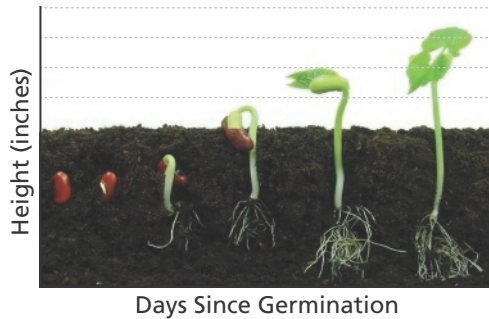
<i>x</i>	<i>y</i>
3	9
5	8
5	6
6	5
6	6
8	3

22.

<i>x</i>	<i>y</i>
1	1
2	3
3	5
3	6
5	8
6	9

APPLY

23. **Make Sense and Persevere** A student is tracking the growth of some plants. What type of association do you think the data would show? Explain.



24. **Model With Mathematics** When planting trees for reforestation purposes, different densities result in different numbers of trees per acre. The following table shows the recommended spacing in square feet and the corresponding trees per acre. What trend line models the data shown in the table? What do the slope and y -intercept of the trend line represent?

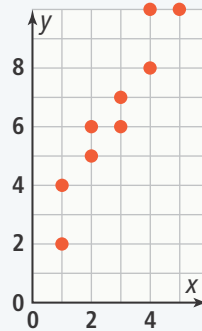
Spacing (ft ²), x	Trees per Acre, y
60	726
64	680
70	622
72	605
80	544
81	530
84	519
90	484
96	454
100	435

25. **Make Sense and Persevere** The table shows the maximum recommended viewing distances y , in feet, for an HDTV with screen size x , in inches. What trend line models the data shown in the table? What does the slope of the trend line represent?

x	40	43	50	55	60
y	8.3	9	10.4	11.5	12.5

ASSESSMENT PRACTICE

26. When two data sets have a negative association, the y -values tend to _____ when the x -values _____.
27. **SAT/ACT** Which equation could represent a possible trend line for the data in the scatter plot?



- Ⓐ $y = -2x + 1$ Ⓑ $y = 2x + 1$
 Ⓒ $y = -2x - 1$ Ⓓ $y = 2x - 1$
28. **Performance Task** A store records the price of kites in dollars, x , and the number of kites, y , sold at each price.

Kite Style	Price	Quantity
	\$10.00	25
	\$12.00	23
	\$15.00	20
	\$22.00	18
	\$30.00	15

- Part A** Make a scatter plot of the data.
- Part B** What trend line models the data? What does the slope of the trend line represent?
- Part C** What factors other than price could influence the number of kites sold? Could you use any of these factors to make another scatter plot? Explain.