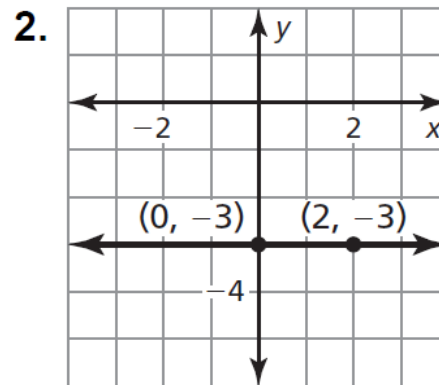
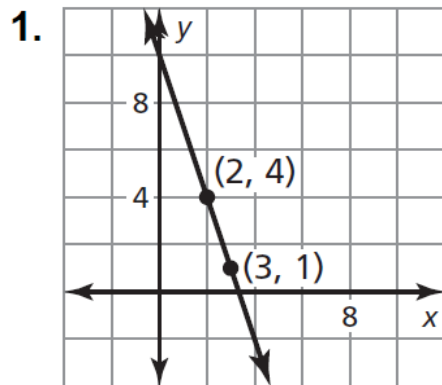
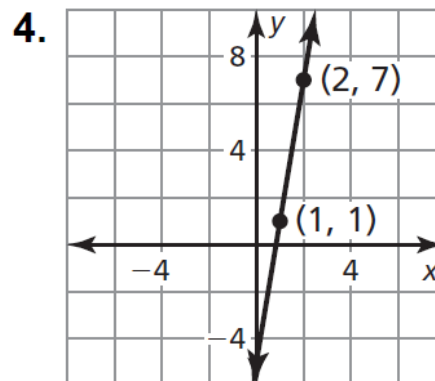
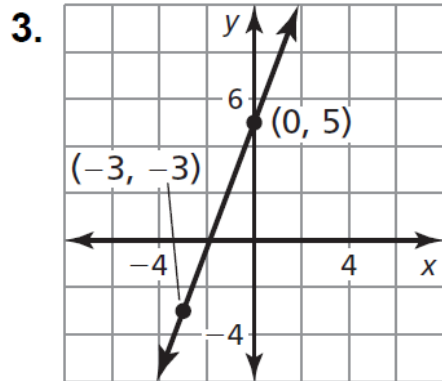


Use the graph to write an equation of the line in slope-intercept form.



Use the graph to write an equation of the line in slope-intercept form.



Graph the linear equation. Identify the x-intercept.

1. $y = x - 5$

2. $y = 3x$

3. $2x - 2y = -2$

4. $y - 3x = 1$

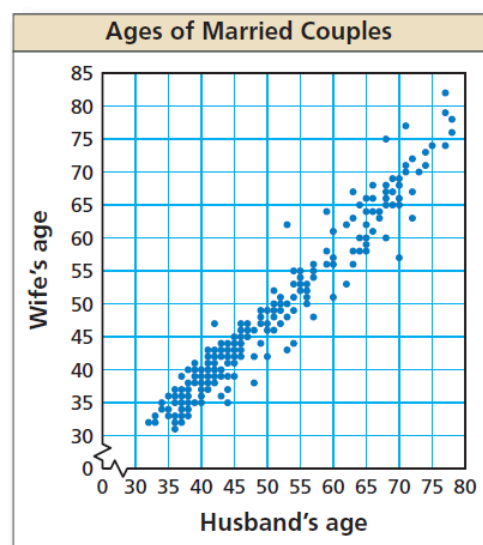
Essential Question

How can you use a scatter plot and a line of fit to make conclusions about data?

A **scatter plot** is a graph that shows the relationship between two data sets. The two data sets are graphed as ordered pairs in a coordinate plane.

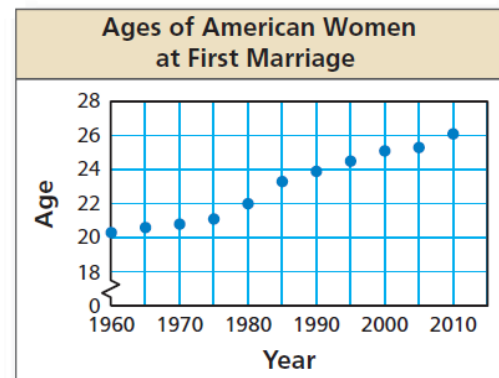
Work with a partner. A survey was taken of 179 married couples. Each person was asked his or her age. The scatter plot shows the results.

- Draw a line that approximates the data. Write an equation of the line. Explain the method you used.
- What conclusions can you make from the equation you wrote? Explain your reasoning.



Work with a partner. The scatter plot shows the median ages of American women at their first marriage for selected years from 1960 through 2010.

- Draw a line that approximates the data. Write an equation of the line. Let x represent the number of years since 1960. Explain the method you used.
- What conclusions can you make from the equation you wrote?
- Use your equation to predict the median age of American women at their first marriage in the year 2020.

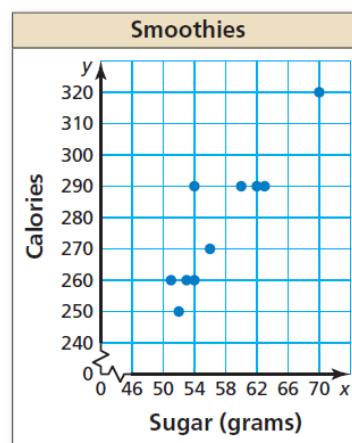


 **Core Concept****Scatter Plot**

A **scatter plot** is a graph that shows the relationship between two data sets. The two data sets are graphed as ordered pairs in a coordinate plane. Scatter plots can show trends in the data.

The scatter plot shows the amounts x (in grams) of sugar and the numbers y of calories in 10 smoothies.

- How many calories are in the smoothie that contains 56 grams of sugar?
- How many grams of sugar are in the smoothie that contains 320 calories?
- What tends to happen to the number of calories as the number of grams of sugar increases?

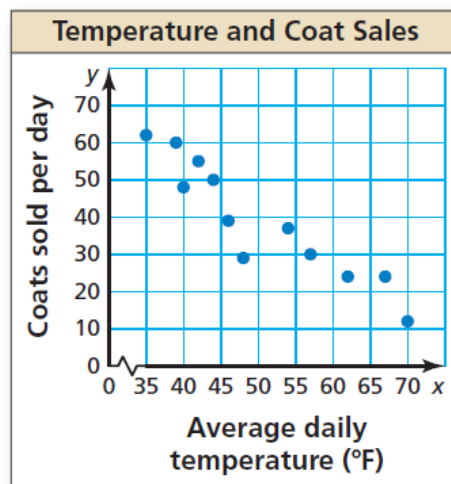
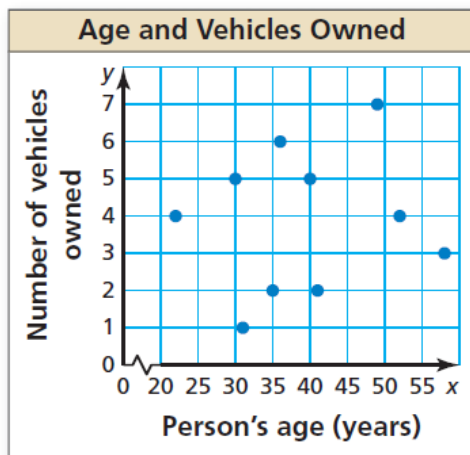


1. How many calories are in the smoothie that contains 51 grams of sugar?

2. How many grams of sugar are in the smoothie that contains 250 calories?

Tell whether the data show a *positive*, a *negative*, or *no* correlation.

- a. age and vehicles owned b. temperature and coat sales at a store



Make a scatter plot of the data. Tell whether the data show a *positive*, a *negative*, or *no* correlation.

3.

Temperature (°F), x	82	78	68	87	75	71	92	84
Attendees (thousands), y	4.5	4.0	1.7	5.5	3.8	2.9	4.7	5.3

4.

Age of a car (years), x	1	2	3	4	5	6	7	8
Value (thousands), y	\$24	\$21	\$19	\$18	\$15	\$12	\$8	\$7

 **Core Concept****Using a Line of Fit to Model Data**

Step 1 Make a scatter plot of the data.

Step 2 Decide whether the data can be modeled by a line.

Step 3 Draw a line that appears to fit the data closely. There should be approximately as many points above the line as below it.

Step 4 Write an equation using two points on the line. The points do not have to represent actual data pairs, but they must lie on the line of fit.

The table shows the weekly sales of a DVD and the number of weeks since its release. Write an equation that models the DVD sales as a function of the number of weeks since its release. Interpret the slope and y -intercept of the line of fit.

Week, x	1	2	3	4	5	6	7	8
Sales (millions), y	\$19	\$15	\$13	\$11	\$10	\$8	\$7	\$5

5. The following data pairs show the monthly income x (in dollars) and the monthly car payment y (in dollars) of six people: (2100, 410), (1650, 315), (1950, 405), (1500, 295), (2250, 440), and (1800, 375). Write an equation that models the monthly car payment as a function of the monthly income. Interpret the slope and y -intercept of the line of fit.

Have students fit a line for *Monitoring Progress* Questions 3 and/or 4.