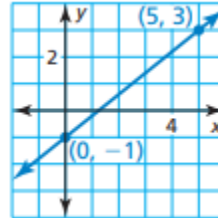**Chapter 4 Additional Test Review**

**4.1**

1. Write an equation of the line with a slope of -2 and a y-intercept of 3.

2. Write an equation of the line in slope-intercept form.

3. Write an equation of the line that passes through the points (0, -5) and (4, 7).

4. Write a linear function f with the values f(0) = 6 and f(4) = -6.

5. In 2006, a company had sales of $10 million. In 2011, sales were $12.5 million. Write a linear model that represents the company's sales as a function of years since 2006. Use the model to predict the sales in 2021.

**4.2**

1. Write an equation in point-slope form of the line that passes through the point (3, -5) and has a slope of 2.

2. Write an equation in slope-intercept form of the line shown.
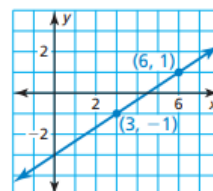
3. Write a linear function f with the values f(1) = 1 and f(-3) = 17.

4. Tell whether the data in the table provided can be modeled by a linear equation. Explain in words. If possible, write a linear equation that represents y as a function of x.

| x | 3 | 5 | 12 | 20 |
|---|---|---|----|----|
| y | 7 | 10 | 16 | 26 |

**4.3**

1. Line *a* passes through (-1, -5) and (1, 3). Line *b* passes through (-3, -7) and (1, 9). Line *c* passes through (0, -2) and (4, -3). Which lines are parallel or perpendicular? Explain in a complete sentence.

2. Write an equation of the line that passes through (-2, 3) and is parallel to the line y = 2x – 1.

3. Write an equation of the line that passes through (0, -2) and is perpendicular to the line $y = \frac{1}{5}x - 2$.

4. A road is constructed perpendicular to South Street. Write an equation that represents this new road.
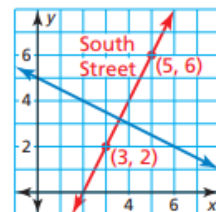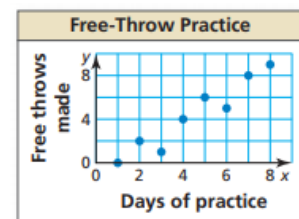


**4.4**

1. The scatter plot shows the days x of practice and the numbers y of free throws made during practice.

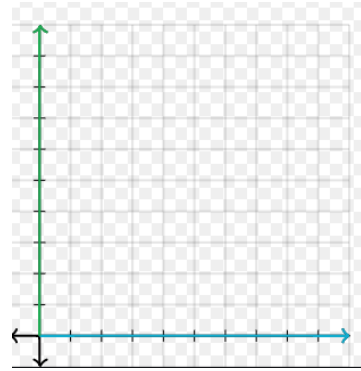    a) How many free throws were made on day 5 of practice?

    b) On which day were 5 free throws made?

2 – 3: The table shows savings y (in dollars) over time x (in months).

| x | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| y | 20 | 18 | 14 | 16 | 12 | 10 |

2. Make a scatterplot of the data. Tell the type of correlation, if any, that the data show.



3. Write an equation that models y as a function of x. Show the work to earn full credit.

**4.5**

1. Is the model y = 2x – 3 a good fit for the data in the table? Explain in a complete sentence.

| x | 1 | 3 | 5 | 7 | 9 |
|---|---|---|---|---|---|
| y | 0 | 3 | 8 | 11 | 14 |

2. Tell whether a correlation is likely in the situation: the number of cars in a store parking lot and the number of people in the store. If so, tell whether there is a casual relationship. Explain in a complete sentence.

3 – 5: The table shows the distance x (in miles) Tom rode his bicycle and the time y (in minutes) of each ride.

| Distance (miles), x | Time (minutes), y |
|---|---|
| 3 | 15 |
| 5 | 27 |
| 9 | 42 |
| 10 | 50 |
| 12 | 58 |
| 15 | 80 |

3. Use a graphing calculator to find an equation of the line of best fit for the data. Identify and interpret the correlation coefficient in terms of the scenario.
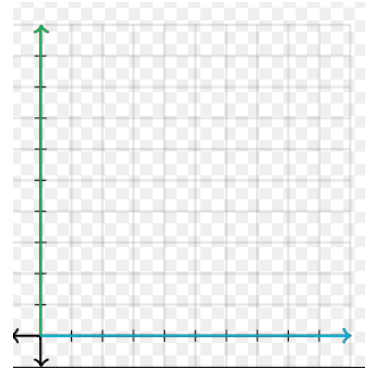
4. Use the equation of the line of best fit to approximate the distance for a 30- minute ride.

5. Predict the time for a 20-mile ride.

**4.6**

1. Write the next three terms of the arithmetic sequence.     -4, -8, -12, - 16, …

2. Graph the arithmetic sequence.    5, 11, 17, 23, …
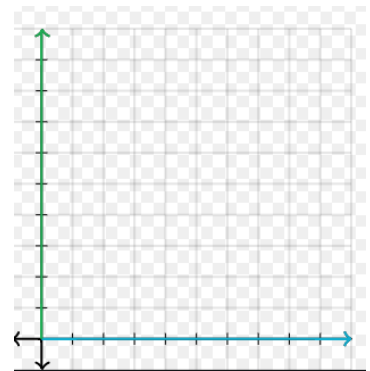
3. Dorrie increases the number of sit-ups she does each week by 8 after doing 10 sit-ups the first week.

| Week | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Sit-Ups | 10 | 18 | 26 | 34 |

a)  Write a function that represents the arithmetic sequence.

b)  Graph the function.

c)  Dorrie's goal is to do 74 sit-ups in one week. In which week will she meet that goal?