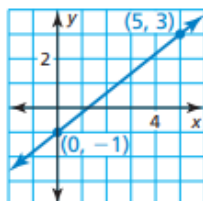


Additional Ch. 4 Test Review Answers

4.1 Answers

- Write an equation of the line with a slope of -2 and y -intercept of 3 .
 $y = -2x + 3$
- Write an equation of the line in slope-intercept form.

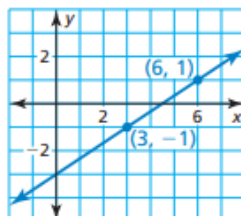


$$y = \frac{4}{5}x - 1$$

- Write an equation of the line that passes through the points $(0, -5)$ and $(4, 7)$. $y = 3x - 5$
- Write a linear function f with the values $f(0) = 6$ and $f(4) = -6$.
 $f(x) = -3x + 6$
- 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 the number of years since 2006. Use the model to predict the sales in 2021.
 $y = 0.5x + 10$; \$17.5 million

4.2 Answers

- Write an equation in point-slope form of the line that passes through the point $(3, -5)$ and has a slope of 2 . $y + 5 = 2(x - 3)$
- Write an equation in slope-intercept form of the line shown.



$$y = \frac{2}{3}x - 3$$

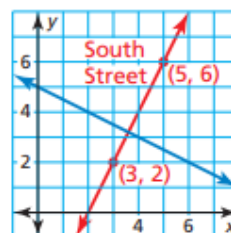
- Write a linear function f with the values $f(1) = 1$ and $f(-3) = 17$.
 $f(x) = -4x + 5$
- Tell whether the data in the table can be modeled by a linear equation. Explain. If possible, write a linear equation that represents y as a function of x .

x	3	5	12	20
y	7	10	16	26

The data cannot be modeled by a linear equation, because the rate of change is not constant.

4.3 Answers

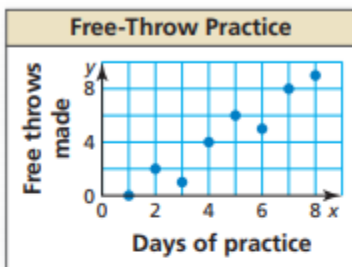
- Line a passes through $(-1, -5)$ and $(1, 3)$. Line b passes through $(-3, -7)$ and $(1, 9)$. Line c passes through $(0, -2)$ and $(4, -3)$. Which lines are parallel or perpendicular? Explain. Lines a and b (slopes: 4) are parallel. Line c (slope: $-\frac{1}{4}$) is perpendicular to lines a and b .
- Write an equation of the line that passes through $(-2, 3)$ and is parallel to the line $y = 2x - 1$.
 $y = 2x + 7$
- Write an equation of the line that passes through $(0, -2)$ and is perpendicular to the line $y = \frac{1}{5}x - 2$. $y = -5x - 2$
- A road is constructed perpendicular to South Street. Write an equation that represents this new road.



$$y = -\frac{1}{2}x + 5$$

4.4 Answers

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

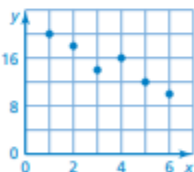


- a. How many free throws were made on day 5 of practice?
6 free throws
- b. On which day were 5 free throws made?
Day 6

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 scatter plot of the data. Tell the type of correlation, if any, that the data show.



a negative correlation

3. Write an equation that models y as a function of x . *Sample answer:* $y = -2x + 22$, using points $(1, 20)$ and $(2, 18)$

4.5 Answers

1. Is the model $y = 2x - 3$ a good fit for the data in the table? Explain.

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

Yes; The residual points are evenly dispersed about the horizontal axis.

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 causal relationship. Explain. *There is a positive correlation and a causal relationship because the more cars there are in the parking lot, the more people there are in the store.*

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

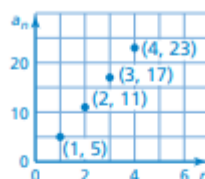
3. Use a graphing calculator to find an equation of the line of best fit for the data. Identify and interpret the correlation coefficient.
 $y = 5x - 1$; about 0.993; a strong positive correlation between distance traveled and time riding
4. Use the equation of the line of best fit to approximate the distance for a 30-minute ride. *about 6.2 miles*
5. Predict the time for a 20-mile ride. *about 99 minutes*

4.6 Answers

1. Write the next three terms of the arithmetic sequence.

$-4, -8, -12, -16, \dots$
 $-20, -24, \text{ and } -28$

2. Graph the arithmetic sequence.
 $5, 11, 17, 23, \dots$



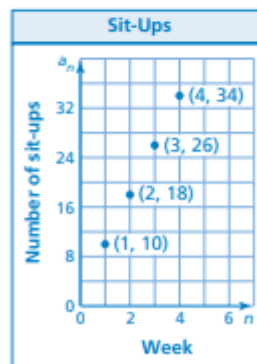
3. Dorrie increases the number of sit-ups she does each week by 8 after doing 10 sit-ups the first week.

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

- a. Write a function that represents the arithmetic sequence.

$$f(n) = 8n + 2$$

- 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? **Week 9**