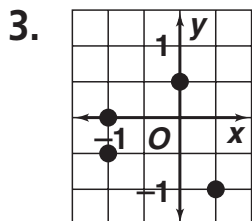
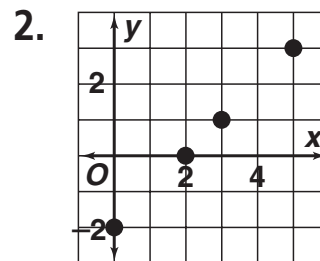
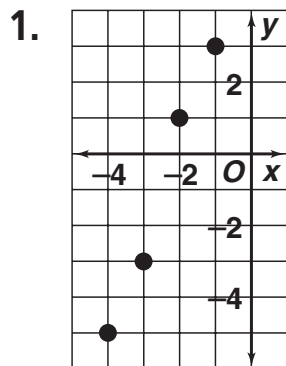


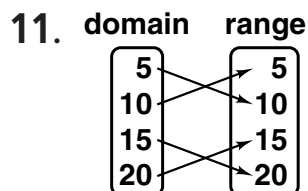
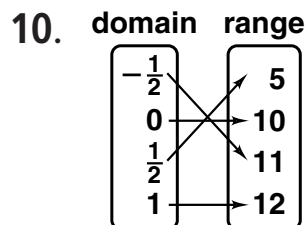
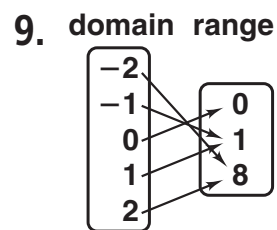
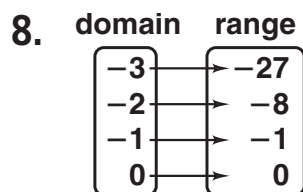
Answers for Lesson 2-1 Exercises



5. $(-2, -2), (-1, 1), (1, 1), (1, 0), (3, 3), (3, -2)$;
domain $\{-2, -1, 1, 3\}$, range $\{-2, 0, 1, 3\}$

6. $(-2, 3), (0, 1), (2, -1), (3, -2)$; domain $\{-2, 0, 2, 3\}$,
range $\{-2, -1, 1, 3\}$

7. $(-2, 0), (-1, 2), (0, 3), (1, 2), (2, 0)$; domain $\{-2, -1, 0, 1, 2\}$,
range $\{0, 2, 3\}$



12. not a function

13. function

14. function

15. function

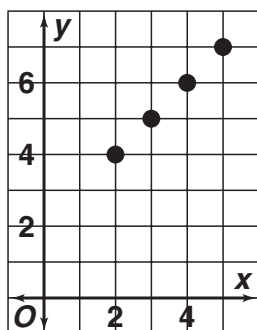
16. function

17. not a function

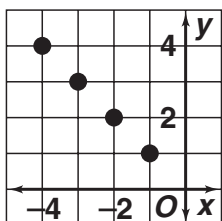
Answers for Lesson 2-1 Exercises (cont.)

18. function
19. function
20. not a function
21. function
22. $-7, -3, 4, 11$
23. $13, 7, -3.5, -14$
24. $4.5, 6.5, 10, 13.5$
25. $-2, -4, -7.5, -11$
26. $21, 13, -1, -15$
27. $-13, -9, -2, 5$
28. $29\frac{1}{3}, 17\frac{1}{3}, -3\frac{2}{3}, -24\frac{2}{3}$
29. $-\frac{23}{6}, -\frac{13}{6}, \frac{3}{4}, \frac{11}{3}$
30. $-\frac{9}{2}, -\frac{7}{2}, -\frac{7}{4}, 0$
31. $y = \frac{x}{39.37}$, where y is the number of meters and x is the number of inches; ≈ 1.50 m

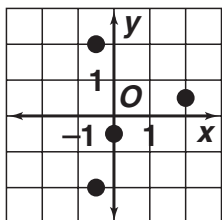
32. domain $\{2, 3, 4, 5\}$, range $\{4, 5, 6, 7\}$



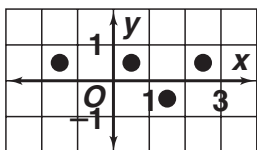
33. domain $\{-4, -3, -2, -1\}$, range $\{1, 2, 3, 4\}$



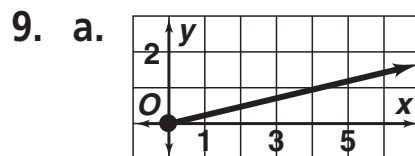
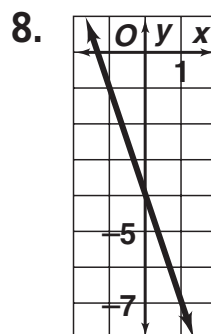
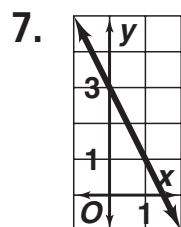
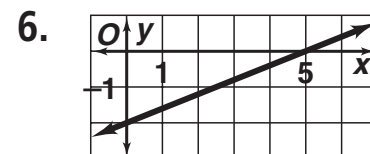
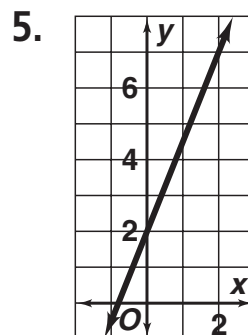
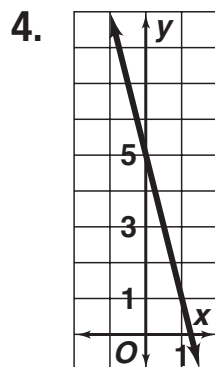
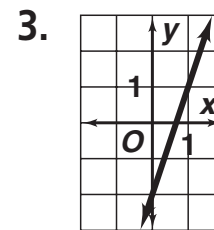
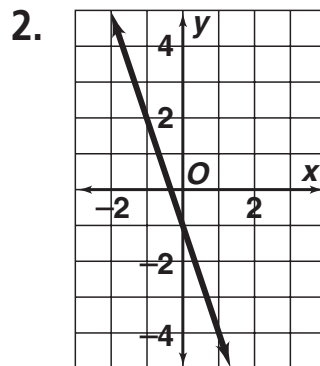
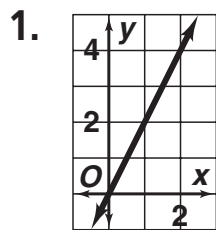
34. domain $\{-\frac{1}{2}, 0, 2\}$, range $\{-2, -\frac{1}{2}, \frac{1}{2}, 2\}$



35. domain $\{-\frac{3}{2}, \frac{1}{2}, \frac{3}{2}, \frac{5}{2}\}$, range $\{-\frac{1}{2}, \frac{1}{2}\}$



Answers for Lesson 2-2 Exercises



$$y = 0.23x$$

$$\text{domain } \{x \mid x \geq 0\}$$

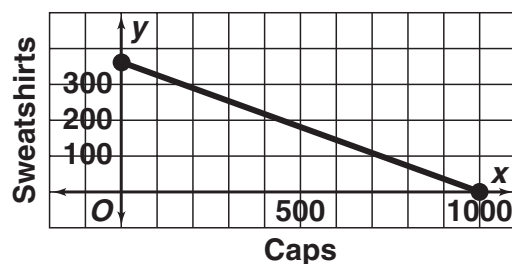
$$\text{range } \{y \mid y \geq 0\}$$

b. x -intercept $(0, 0)$, y -intercept $(0, 0)$; when no miles have been driven, there is no cost.

c. 0.23 represents a cost of \$.23 per mile driven.

Answers for Lesson 2-2 Exercises (cont.)

10. a.



b. The x -intercept is the point that represents selling 1000 caps and 0 sweatshirts in order to raise the \$4500. The y -intercept represents selling 0 caps and 360 sweatshirts to raise the \$4500.

11. -1

12. -2

13. 3

14. $\frac{4}{11}$

15. $-\frac{1}{5}$

16. 1

17. undefined

18. 0

19. $\frac{17}{5}$

20. $3x - y = -2$

21. $\frac{5}{6}x - y = \frac{19}{3}$

22. $\frac{3}{5}x + y = -\frac{12}{5}$

23. $y = -2$

24. $x + y = 2$

25. $5x - y = -2$

26. $y - 3 = -1(x + 10)$

27. $y - 0 = \frac{5}{4}(x - 1)$

28. $y - 10 = -\frac{5}{2}(x + 4)$

29. $y + 1 = -\frac{4}{3}(x - 0)$

30. $y - 11 = 1(x - 7)$

31. $y - 9 = -\frac{7}{5}(x - 1)$

32. -5

33. $\frac{3}{2}$

34. $-\frac{1}{2}$

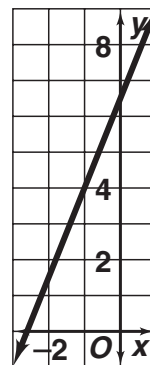
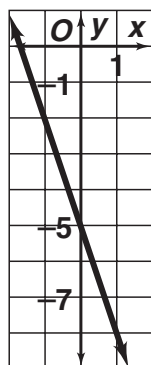
35. $-\frac{A}{B}$

36. $\frac{A}{B}$

37. 0

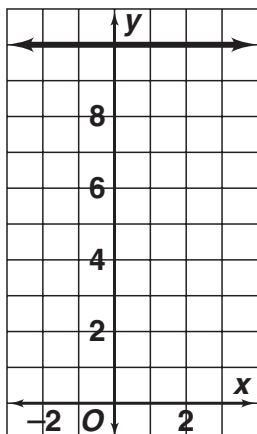
38. $y = -3x - 5$

39. $y = \frac{5}{2}x + \frac{13}{2}$

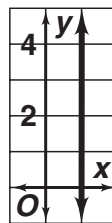


Answers for Lesson 2-2 Exercises (cont.)

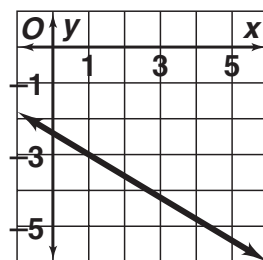
40. $y = 10$



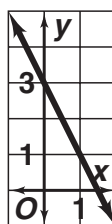
41. $x = 1$



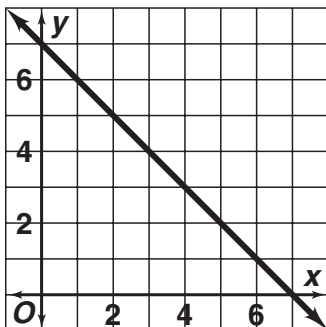
42.



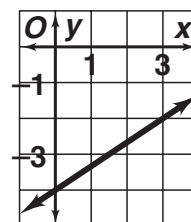
43.



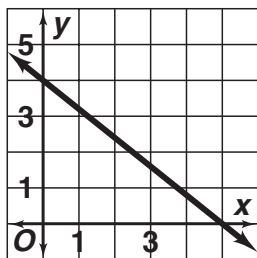
44.



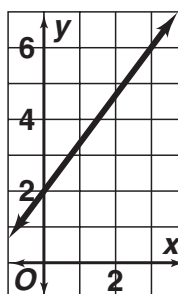
45.



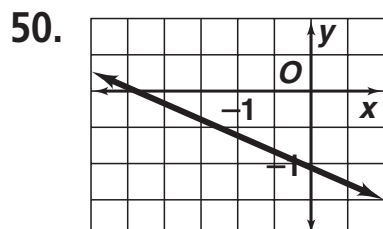
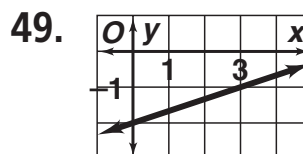
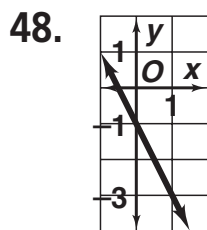
46.



47.



Answers for Lesson 2-2 Exercises (cont.)



51. $\frac{1}{3}$

52. $\frac{2}{3}$

53. $-\frac{1}{4}$

54. $\frac{2}{3}, (0, 4), (-6, 0)$

55. $-1, (0, 1000), (1000, 0)$

56. $-0.8, (0, 0.4), (0.5, 0)$

57. $54, (0, -1), (\frac{1}{54}, 0)$

58. undefined slope, no y-intercept, $(-3, 0)$

59. $0, (0, 0)$, all pts. on x -axis

60. $-\frac{1}{2}, (0, -\frac{5}{2}), (-5, 0)$

61. $\frac{R}{S}, (0, -\frac{T}{S}), (\frac{T}{R}, 0)$

62. $-\frac{A}{B}, (0, \frac{C}{B}), (\frac{C}{A}, 0)$

63. $-\frac{5}{13}$

64. $\frac{7}{5}$

65. $-\frac{7}{10}$

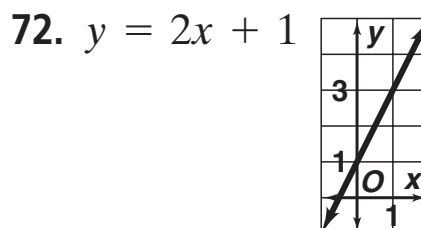
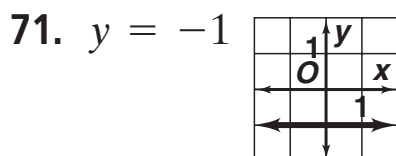
66. $y = \frac{3}{4}x + 3$

67. $y = 3x + 2$

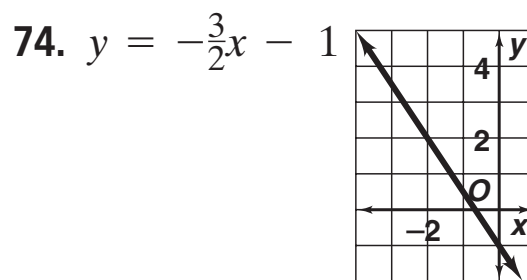
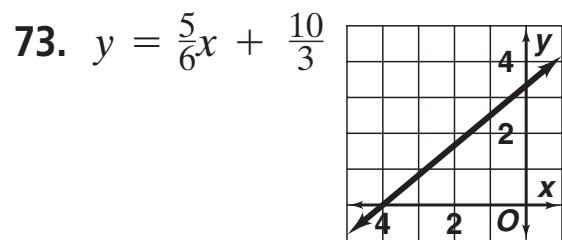
68. $y = -\frac{3}{2}x - \frac{1}{2}$

69. B

70. Vertical lines cannot be graphed by this method.



Answers for Lesson 2-2 Exercises (cont.)



75. $3x - 2y = 2$

76. $9x + 3y = 2$

77. $3x + 12y = -4$

78. a–e. Check students' work. The polygon is a rectangle.

79. yes

80. no

81. $y = 3x + 6$; $y = -\frac{1}{3}x + \frac{8}{3}$; $(\frac{1}{2}, 2\frac{1}{2})$

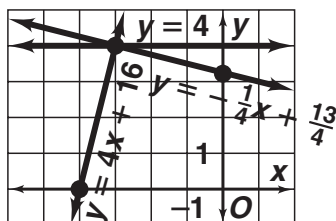
82. The equation of the line connecting $(1, 3)$ to $(-2, 6)$ is $y = -x + 4$. The equation of the line connecting $(1, 3)$ to $(3, 5)$ is $y = x + 2$. The slopes are negative reciprocals so the lines are perpendicular. Therefore by def. of a right triangle it is a right triangle.

83. The slope of the line connecting $(2, 5)$ to $(4, 8)$ is $\frac{3}{2}$, $(2, 5)$ to $(5, 3)$ is $-\frac{2}{3}$, $(4, 8)$ to $(7, 6)$ is $-\frac{2}{3}$, and $(5, 3)$ to $(7, 6)$ is $\frac{3}{2}$. Since the adjacent sides' slopes are negative reciprocals they are perpendicular. By the def. of a rectangle, it is a rectangle.

84. $p: y = 4x + 16$

$q: y = -\frac{1}{4}x + \frac{13}{4}$

$r: y = 4$



Answers for Lesson 2-3 Exercises

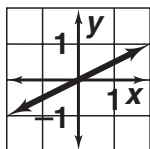
1. yes; $k = 2, y = 2x$
2. yes; $k = -3, y = -3x$
3. no
4. yes; $k = \frac{1}{3}, y = \frac{1}{3}x$
5. yes; $k = 7, y = 7x$
6. no
7. yes; $k = -2, y = -2x$
8. no
9. yes; $k = 12$
10. yes; $k = 6$
11. yes; $k = -2$
12. no
13. no
14. yes; $k = -5$
15. yes; $k = 6$
16. no
17. $k = \frac{2}{7}; -\frac{10}{7}$
18. $k = -\frac{5}{3}; \frac{25}{3}$
19. $k = -1; 5$
20. $k = 2; -10$
21. $k = -\frac{17}{4}; 21\frac{1}{4}$
22. $k = -\frac{1}{4}; 1\frac{1}{4}$
23. a. $k = \frac{13}{36}$
- b. $s = \frac{13}{36}h$
- c. ≈ 23 ft 1 in.
24. -3
25. 4
26. 10.5
27. $\frac{5}{3}$
28. yes; $k = \frac{2}{3}, y = \frac{2}{3}x$
29. no
30. no
31. yes; $k = 1.3, y = 1.3x$
32. 682
33. $y = 2x$
34. $y = \frac{7}{3}x$
35. $y = -\frac{9}{2}x$
36. $y = -500x$
37. $y = \frac{3}{5}x$
38. $y = -\frac{1}{9}x$
39. $y = \frac{2}{7}x$
40. $y = -\frac{14}{3}x$
41. 9
42. 6
43. 90
44. -140
45. 1.2
46. No; $y = 1.7x$ does not contain the point $(9, -9)$.

Answers for Lesson 2-3 Exercises (cont.)

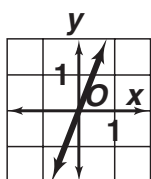
47. Yes; $y = -\frac{5}{6}x$ contains the point $(15, -12\frac{1}{2})$.

48. Yes; $y = \frac{7}{2}x$ contains the point $(6\frac{1}{2}, 22\frac{3}{4})$.

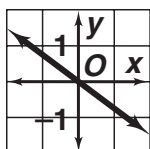
49. Answers may vary. Sample: $y = 0.5x$



50. Answers may vary. Sample: $y = 3.2x$



51. Answers may vary. Sample: $y = -\frac{3}{4}x$



52. a. $y = 28x$ b. 103.6 mi

c. 417.9 gal d. \$.056/mi

53. Answers may vary. Sample: No; $y = 0$ passes through the origin, but is not a direct variation.

54. Answers may vary. Sample: If y varies directly with x^2 , and $y = 2$ when $x = 4$, then $y = 10\frac{1}{8}$ when $x = 9$.

55. y is doubled.

56. y is halved.

57. y is divided by 7.

58. y is multiplied by 10.

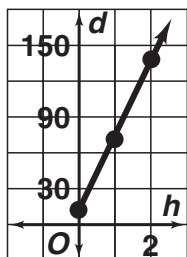
59. a. $\frac{1}{2}$

b. 32

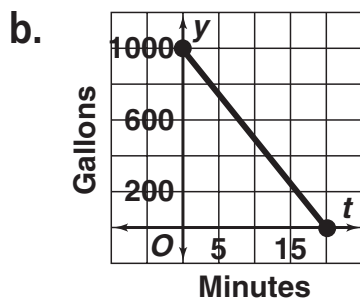
c. $z = kxy$, $x = k_1w$, so $z = kk_1wy$, z varies jointly with w and y .

Answers for Lesson 2-4 Exercises

1. $d = 62.5h + 15$

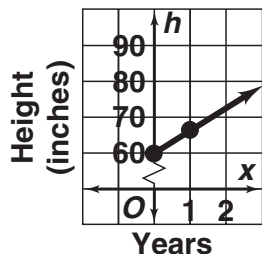


2. a. $y = -50t + 1000$



The y -intercept $(0, 1000)$ represents the filled pool, and the t -intercept $(20, 0)$ represents the time needed to empty the pool.

3. $h = 8x + 60$

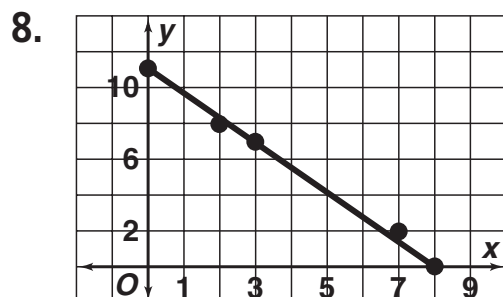


4. $y = x - 1$; 5 leaves

5. $y = 0.5x + 0.75$; 3.25 lb

6. $y = 58.\bar{3}x - 3.\bar{3}$; 172 blades of grass

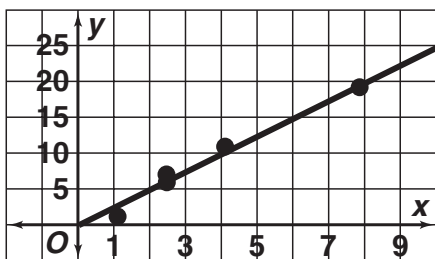
7. $y = 1.75x + 1.75$; \$8.40



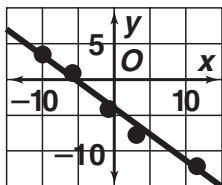
Linear model is reasonable; models may vary. Sample: $y = -1.3x + 11$

Answers for Lesson 2-4 Exercises (cont.)

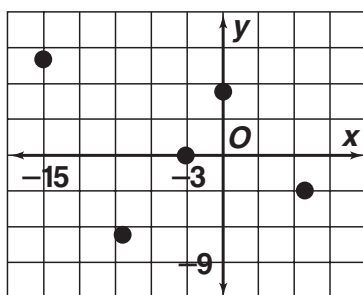
9. Linear model is reasonable; models may vary. Sample:
 $y = 2.6x - 0.6$



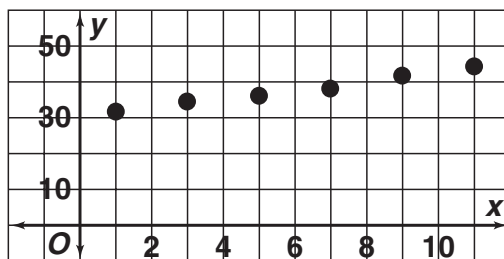
10. Linear model is reasonable; models may vary.
 Sample: $y = -0.75x - 3.7$



11. not reasonable



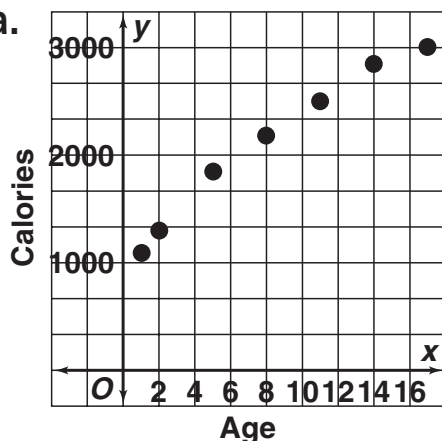
12. a. Linear model is reasonable.



b. 40

c. Answers may vary. Sample: After drawing a trend line on the graph, locate the European size on the y -axis. Then find the corresponding U.S. size on the x -axis.

13. a. Answers may vary. Sample:
 $y = 110x + 1170$

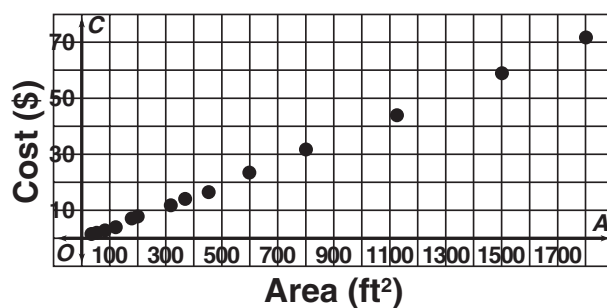


b. 2930 Cal

c. Answers may vary. Sample:
 No; adults need fewer
 Calories, not more.

Answers for Lesson 2-4 Exercises (cont.)

14. a.



b–e. Answers may vary. Samples are given.

b. $c = 0.04A$

c. The model fits the data very closely.

d. No; the area of the tarp is 150 ft² so the price should be \$6.00.

e. 6×8 ft; \$0.07

15. $y = -4x + 10$

16. $y = -3x - 6$

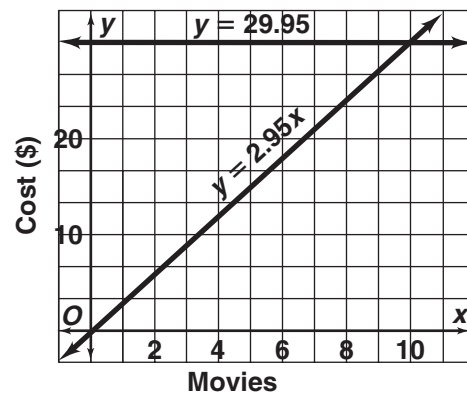
17. $y = -7.5x - 2.5$

18. $y = 1.4375x - 7.33125$

19. a. $y = 29.95$

b. $y = 2.95x$; slope = 2.95, y-intercept = 0

c. Answers may vary. Sample:



Either way, you will average the same costs over the long run.

20. a. Answers may vary. Sample: $y = 0.0714x - 9.3$

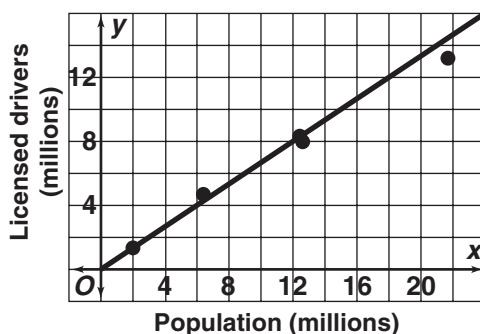
b. 14.3 g

c. 200 Cal; a 200 Cal hamburger is closer to 5 g.

Answers for Lesson 2-4 Exercises (cont.)

21. a. population

b-c.



d. 7 million

e. Answers may vary. Sample: Strong; the points fall close to a straight line.

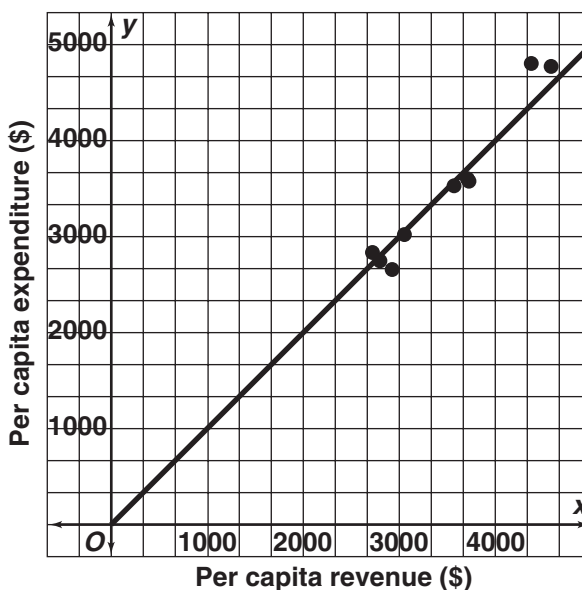
22. D

23. 104.5

24. 85.8

25. 13

26. a.



b. about \$2100

c. about \$3400

d. Answers may vary. Sample: No, expenditure would be predicted to be about \$3600. The data point is far off the line.

Answers for Lesson 2-4 Exercises (cont.)

27. a. $y = -\frac{17}{11}x + 14.27$

b. $y = -2x + 10$

c. Answers may vary. Sample: neither; $y = -1.5x + 12$

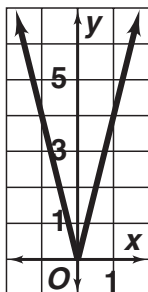
28. $y = \frac{5}{2}x - 2$

Answers for Lesson 2-5 Exercises

1-9. Tables may vary. Samples are given.

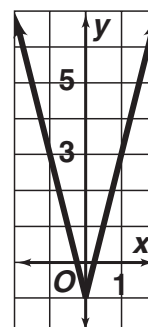
1.

x	0	-1	1	-2	2
y	0	4	4	8	8



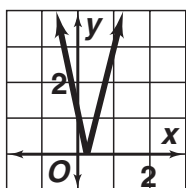
2.

x	-2	-1	0	1	2
y	7	3	-1	3	7



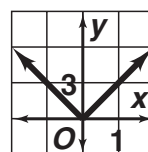
3.

x	-1	0	$\frac{1}{4}$	1	2
y	5	1	0	3	7



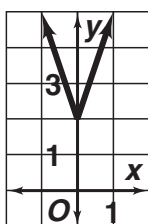
4.

x	-2	-1	0	1	2
y	6	3	0	3	6



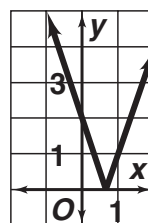
5.

x	-2	-1	0	1	2
y	8	5	2	5	8



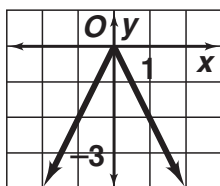
6.

x	-1	0	$\frac{2}{3}$	1	2
y	5	2	0	1	4



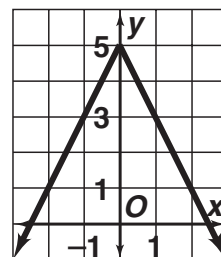
7.

x	-2	-1	0	1	2
y	-4	-2	0	-2	-4



8.

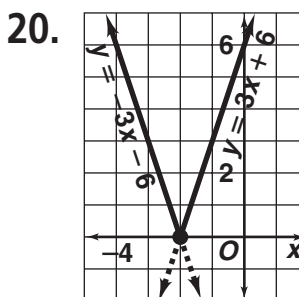
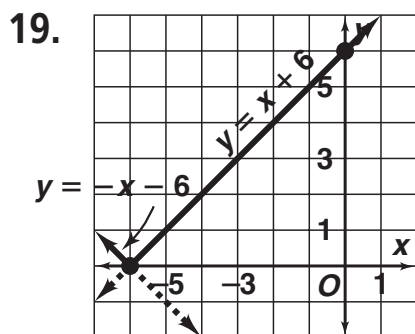
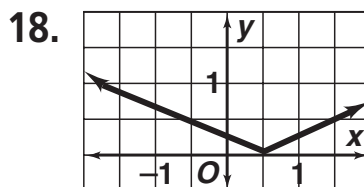
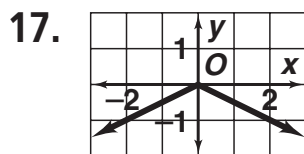
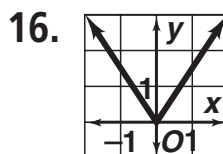
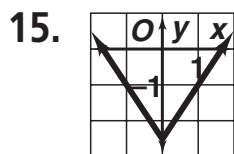
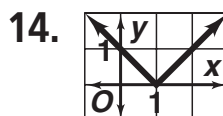
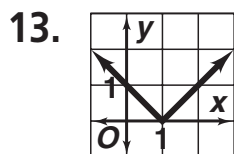
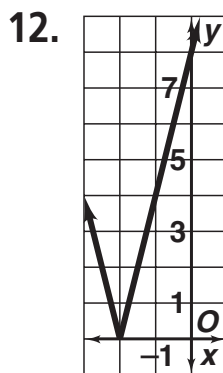
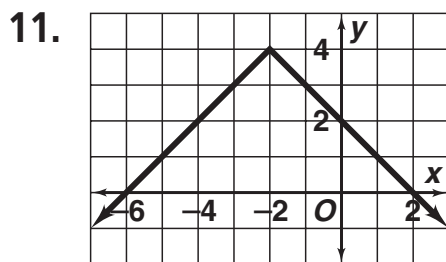
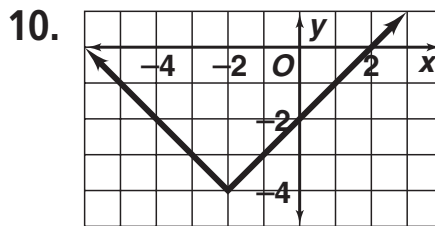
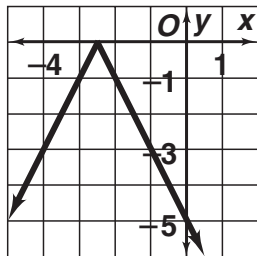
x	-2	-1	0	1	2
y	1	3	5	3	1



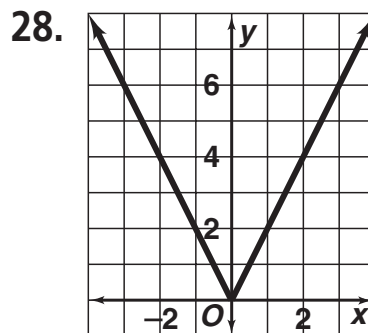
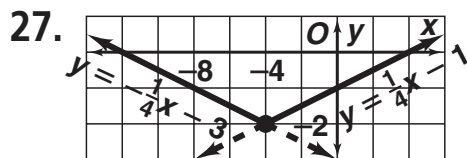
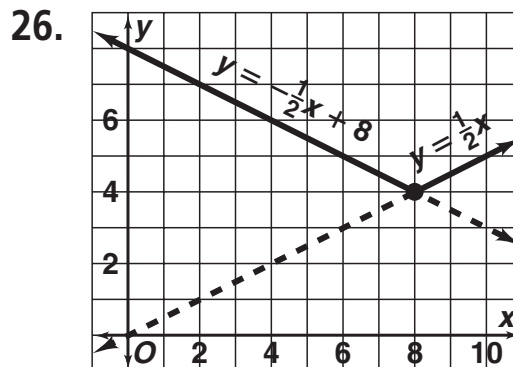
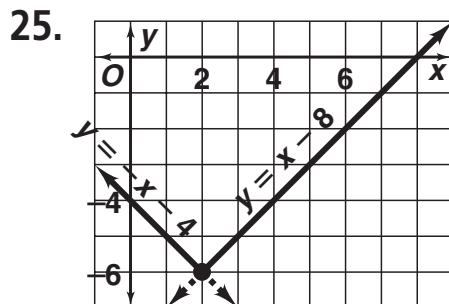
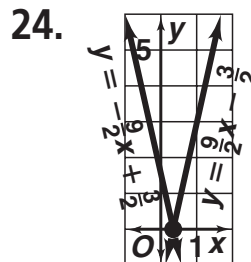
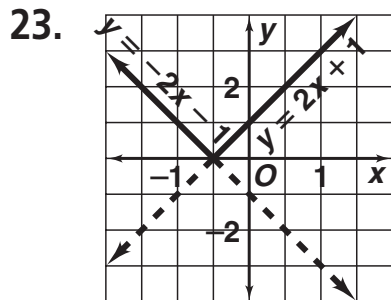
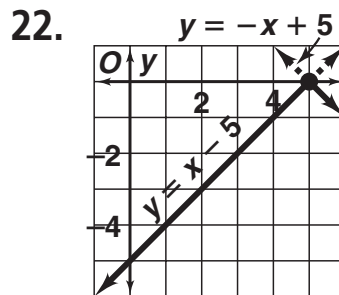
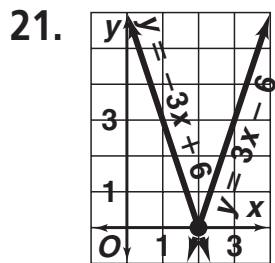
Answers for Lesson 2-5 Exercises (cont.)

9.

x	-4	-3	$-\frac{5}{2}$	-1	0
y	-3	-1	0	-3	-5



Answers for Lesson 2-5 Exercises (cont.)

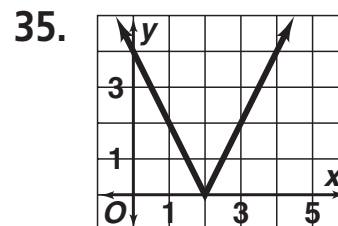
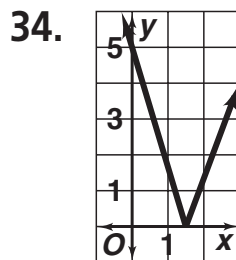
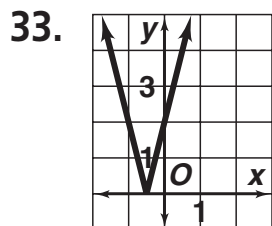


29. B

30. C

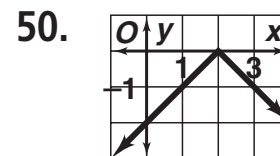
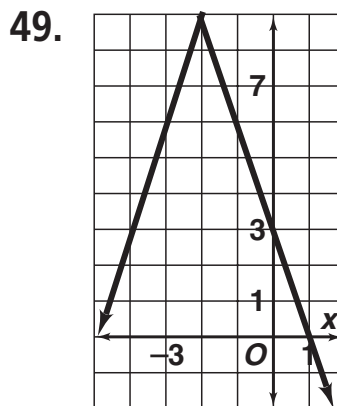
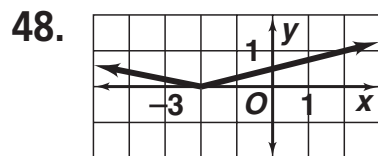
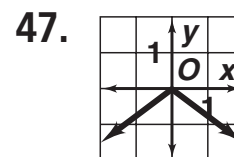
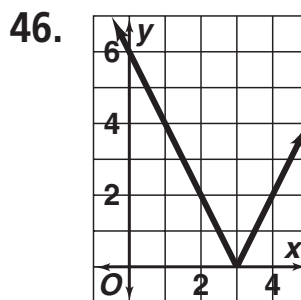
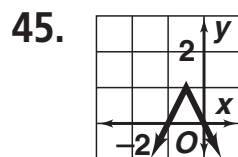
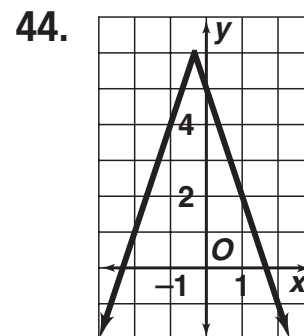
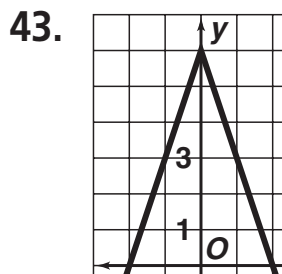
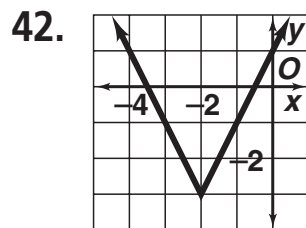
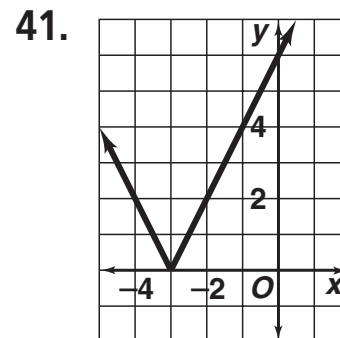
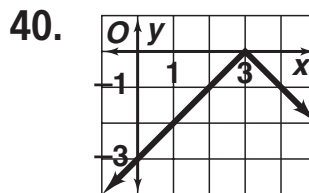
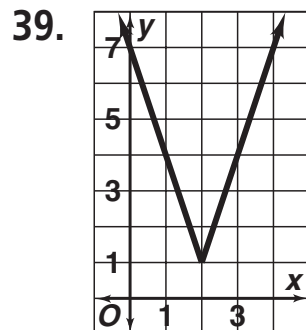
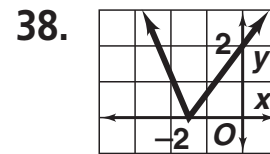
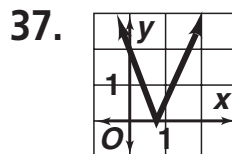
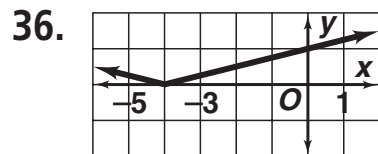
31. A

32. D



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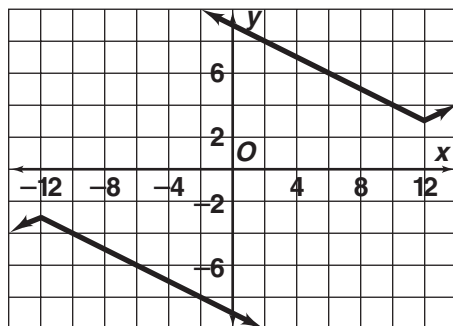
Answers for Lesson 2-5 Exercises (cont.)



Answers for Lesson 2-5 Exercises (cont.)

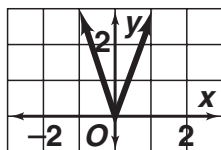
51. A

52. a.

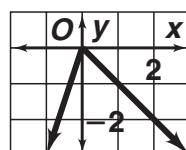


b. Answers may vary. Sample:
Same shape and size,
different vertices, and one
points down.

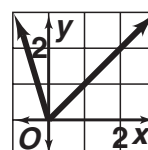
53.



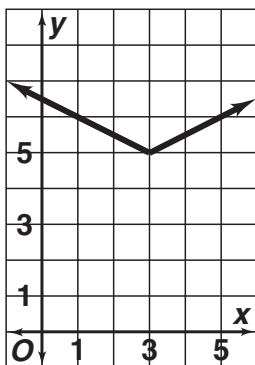
54.



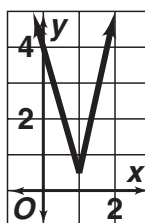
55.



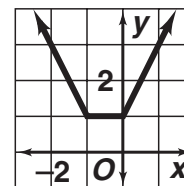
56.



57.



58.

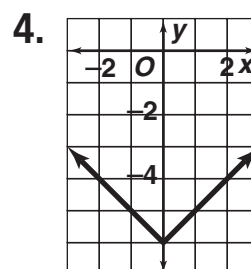
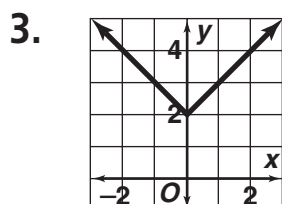
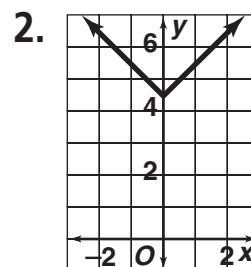
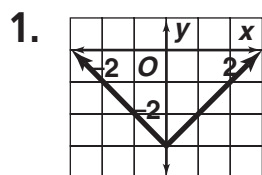


59. Answers may vary. Samples:

a. $y = |x|, y = -|x|$

b. $y = |x|, y = |x - 1| + 1$

Answers for Lesson 2-6 Exercises



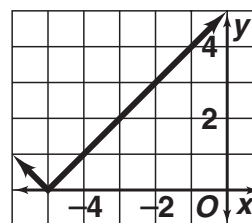
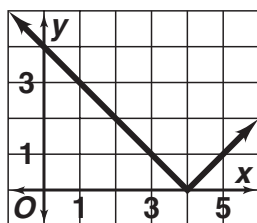
5. $y = |x| - \frac{2}{3}$

6. $y = |x| + 4$

7. $y = |x| + 2$

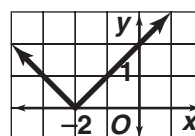
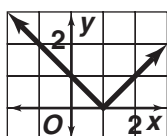
8. right 4 units

9. left 5 units



10. right 1 unit

11. left 2 units



12. $y = |x + 2|$

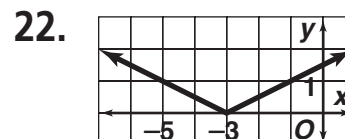
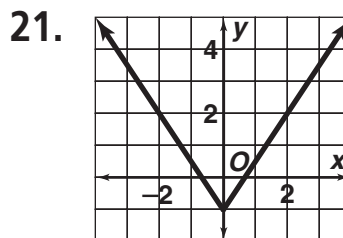
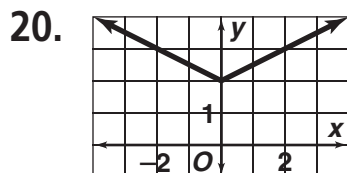
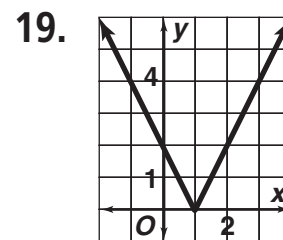
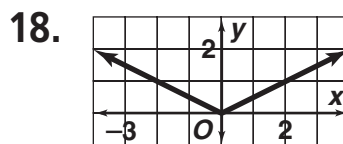
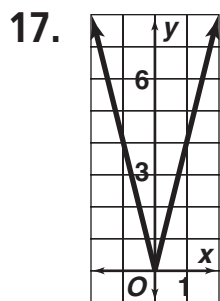
13. $y = |x - 3|$

14. $y = |x - 4|$

15. Answers may vary. Sample: 4.5 units left

16. Answers may vary. Sample: $\frac{17}{4}$ units to the right

Answers for Lesson 2-60 Exercises (cont.)



23. $y = 2|x|$

24. $y = \frac{1}{4}|x|$

25. $y = \frac{2}{3}|x|$

26. $y = -2|x|$

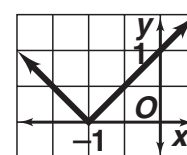
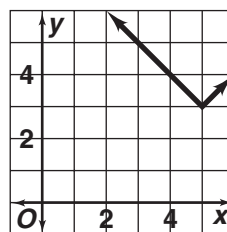
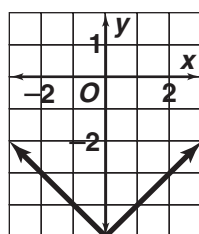
27. $y = -\frac{1}{3}|x|$

28. $y = -\frac{2}{5}|x|$

29. vertical

30. combined

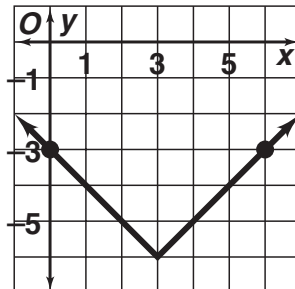
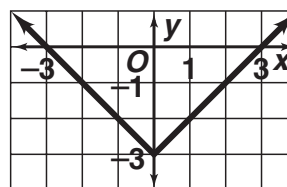
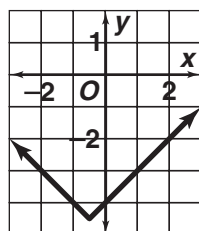
31. horizontal



32. combined

33. vertical

34. combined



35. $y = |x - 2| - 2$

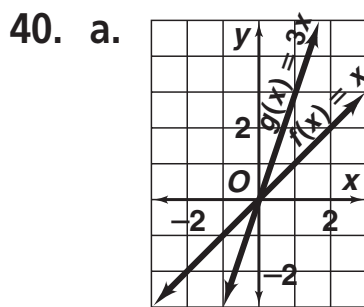
36. $y = -|x - 1|$

Answers for Lesson 2-6 Exercises (cont.)

37. $y = -|x + 2| + 4$

38. Horizontal; the graph is shifted left.

39. Answers may vary. Sample: Since a vert. translation affects only y -values and a horiz. translation affects only x -values, order is irrelevant.



c. $y = 3x - 1$

d. E

e. $y = m(x - h) + k$

b. $y = 3x + 5$

41. Check students' work.

42. $y = |x - 7| - 2$

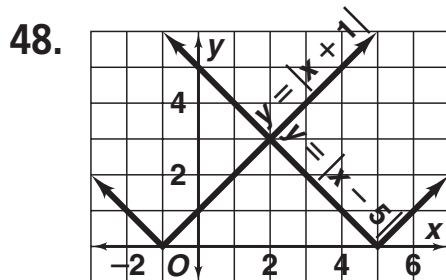
43. $y = -|x| - 3$

44. $y = -|x + 5|$

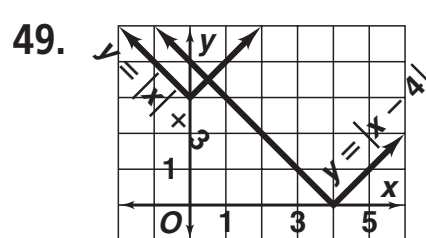
45. $y = 2|x + 4| + 3$

46. $y = |x - a| + b$

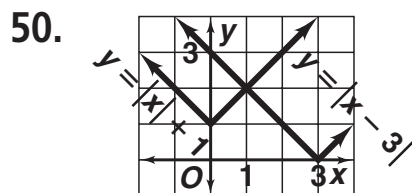
47. $y = -|x - p| + q$



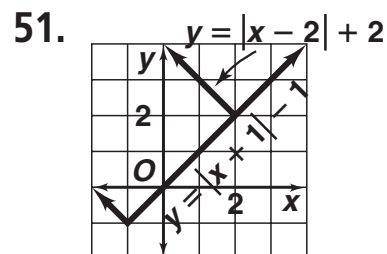
6 right



4 right, 3 down

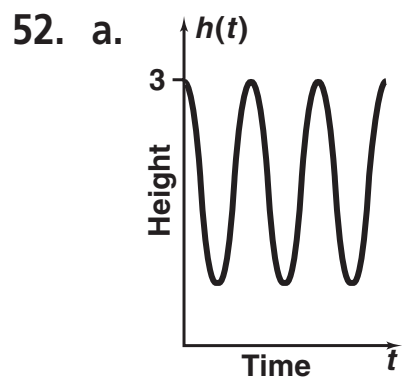


3 left, 1 up



3 right, 3 up

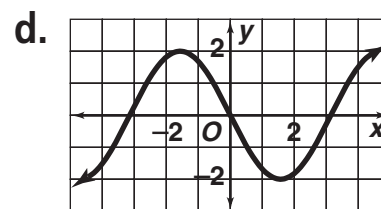
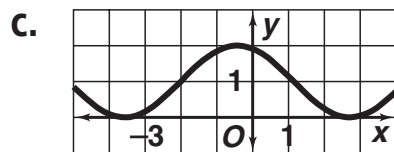
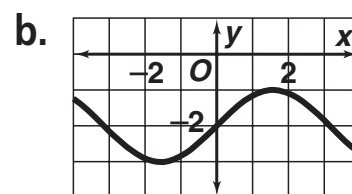
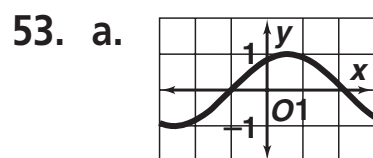
Answers for Lesson 2-6 Exercises (cont.)



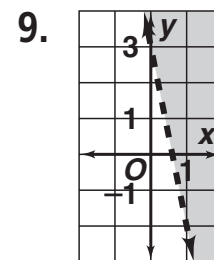
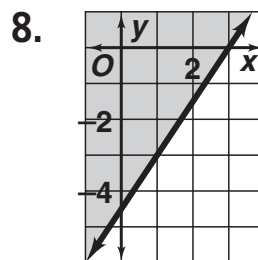
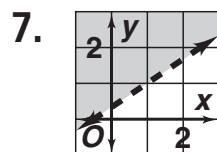
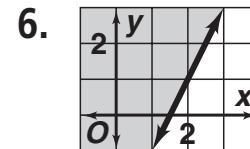
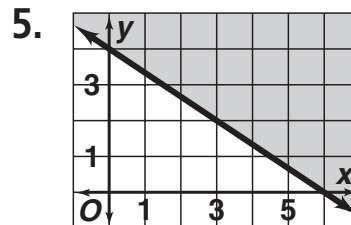
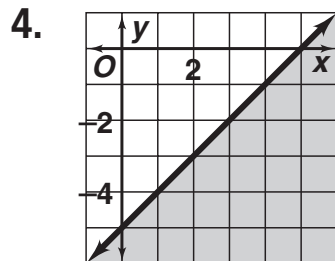
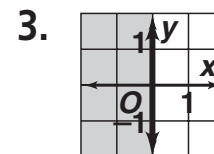
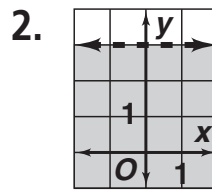
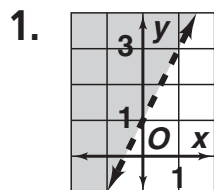
b. Yes; Sample explanation; each t is paired with a unique height.

c. vertical translation 5 ft up

d. C

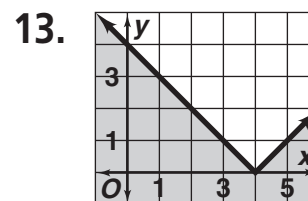
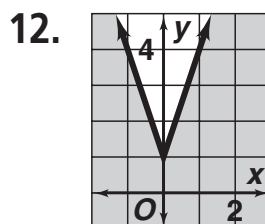
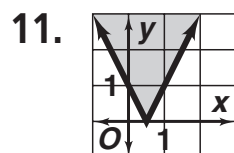
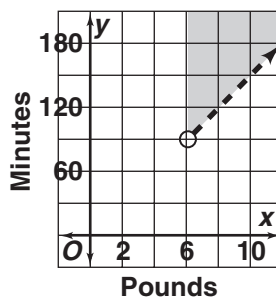
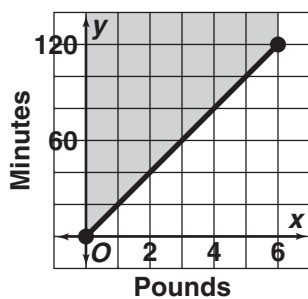


Answers for Lesson 2-7 Exercises

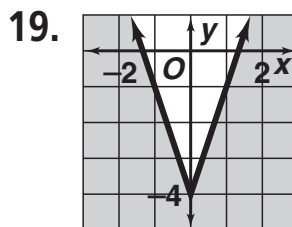
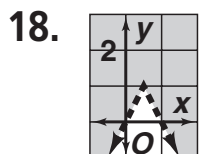
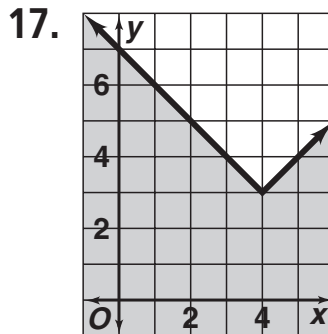
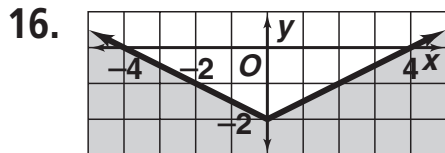
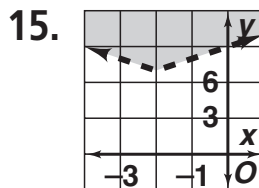
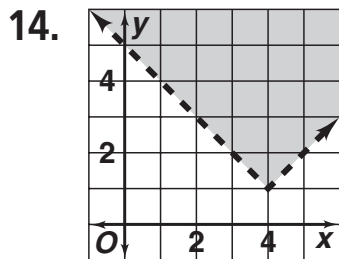


10. a. $y \geq 20x$ if $x \leq 6$,
 $y \geq 15x$ if $x > 6$

b. Answers may vary. Sample:



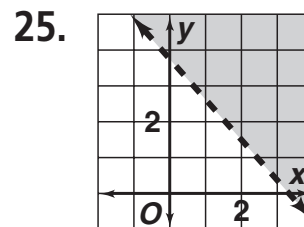
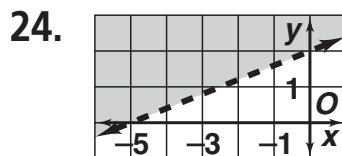
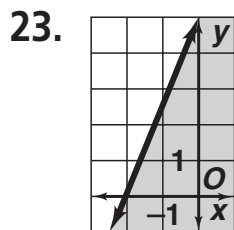
Answers for Lesson 2-7 Exercises (cont.)



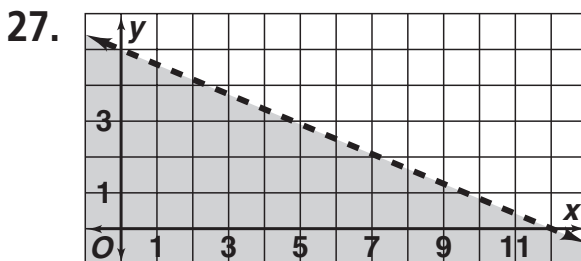
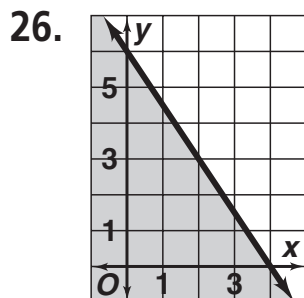
20. $y < -x - 2$

21. $5x + 3y \leq 9$

22. $2y \geq |2x + 6|$

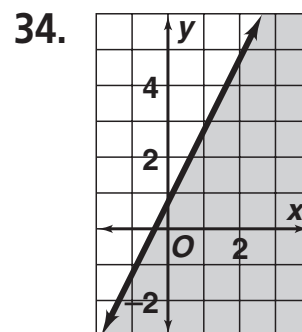
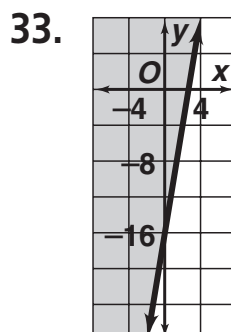
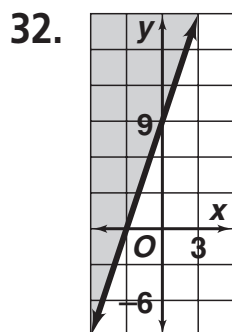
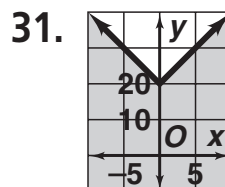
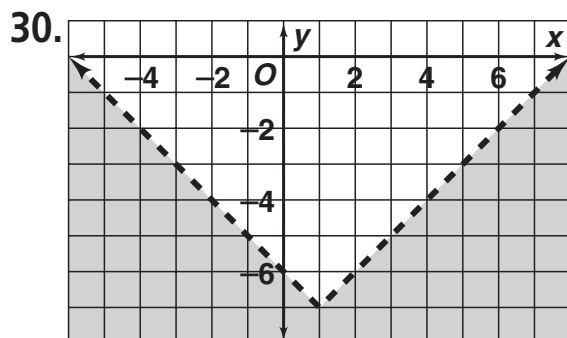
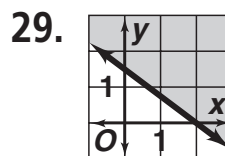
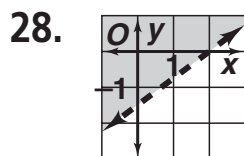


$y > \frac{2}{5}x + 2$



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Answers for Lesson 2-7 Exercises (cont.)



35. Answers may vary. Sample: $y \leq -\frac{5}{3}x + \frac{95}{3}$

36. $x > -3$

37. $y \leq \frac{3}{2}x + 2$

38. $y \geq -2x + 4$

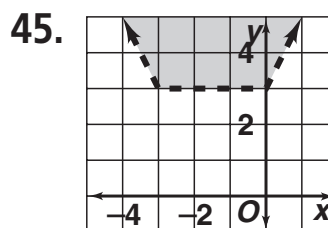
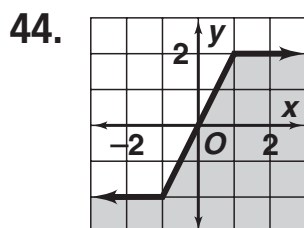
39. $y \leq |x + 2|$

40. $y < -|x - 4|$

41. $y > |x + 1| - 1$

42. C

43. Answers may vary. Sample: when it lies on the boundary line



Answers for Lesson 2-7 Exercises (cont.)

