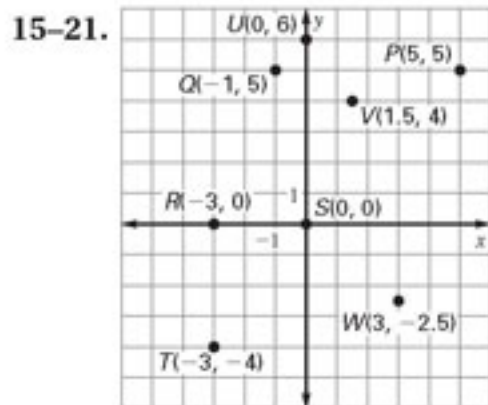


Selected Answers

Chapter 3

3.1 Skill Practice 1. 5; -3 3. (3, -2)

5. (4, 4) 7. (4, -1) 9. (-5, 4) 11. (-4, -1)



15. Quadrant II
17. origin
19. y-axis
21. Quadrant IV

25.

-9, -7, -5, -3, -1

27.

-2, -1, 0, 1, 2

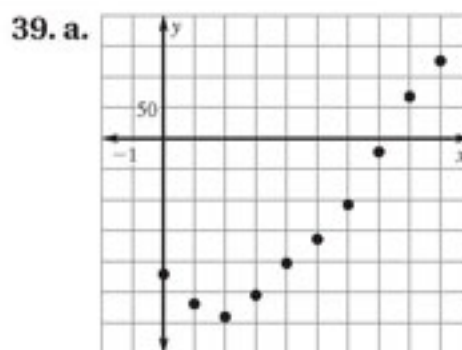
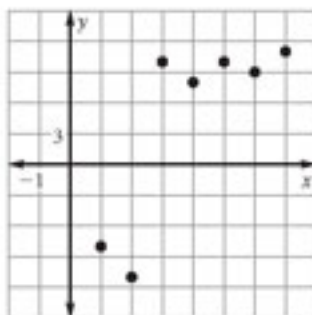
29. Quadrant IV; the x -coordinate is positive and the y -coordinate is negative so the point is in Quadrant IV.

31. Quadrant II; the x -coordinate is negative and the y -coordinate is positive so the point is in Quadrant II.

33. If the x -coordinate is 0, then the point is on the y -axis. If the y -coordinate is 0, then the point is on the x -axis.

3.1 Problem Solving

37. There is exactly one low temperature for each day in February.



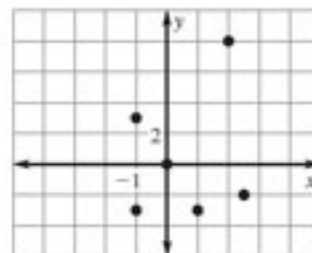
b. *Sample answer:* From 1992 to 1999 the federal deficit was decreasing.

41. a.

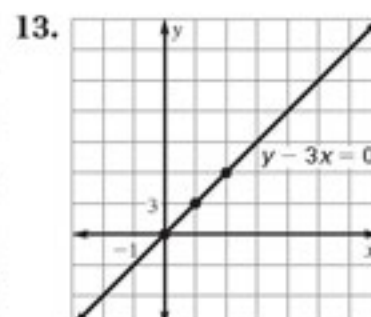
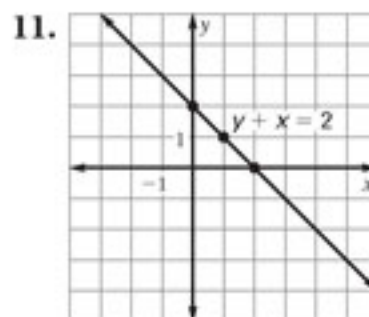
Height (in.)		
Reported	Measured	Difference
70	68	2
70	67.5	2.5
78.5	77.5	1
68	69	-1
71	72	-1
70	70	0

Weight (lb)		
Reported	Measured	Difference
154	146	8
141	143	-2
165	168	-3
146	143	3
220	223	-3
176	176	0

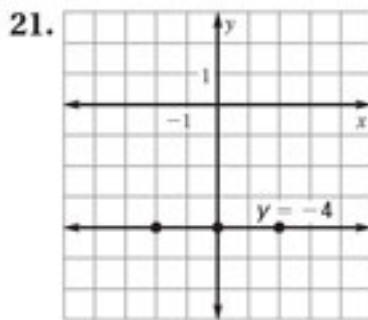
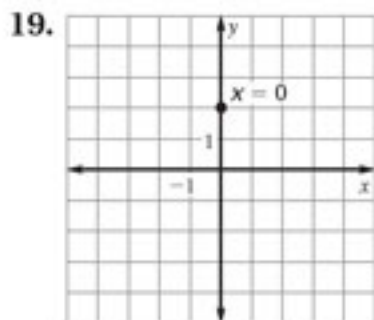
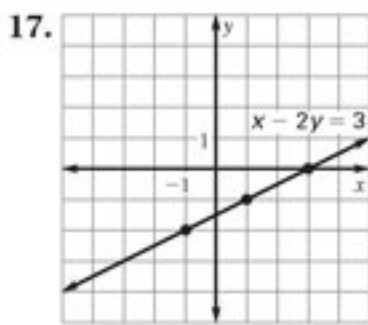
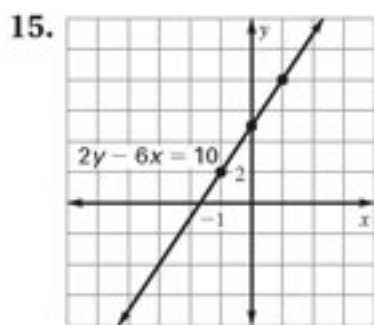
b. (2, 8), (2.5, -2), (1, -3), (-1, 3), (-1, -3), (0, 0)



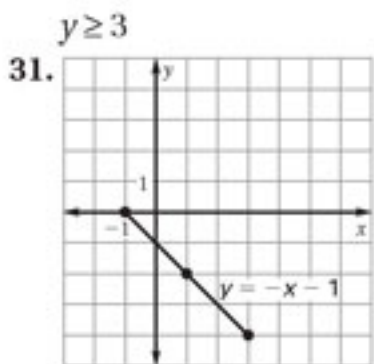
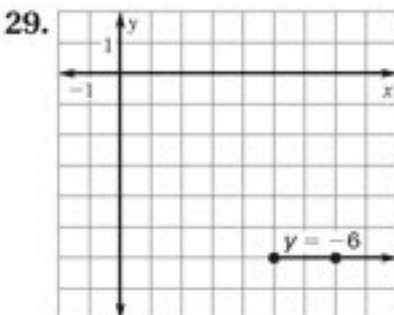
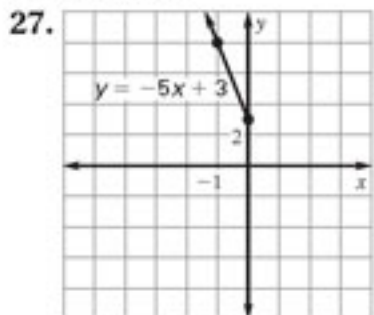
3.2 Skill Practice 1. linear function 3. solution
5. solution 7. not a solution 9. The 8 should be substituted for x and 11 for y , $11 - 8 \neq -3$, so (8, 11) is not a solution.



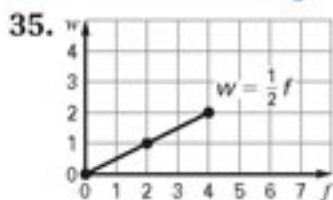
Selected Answers



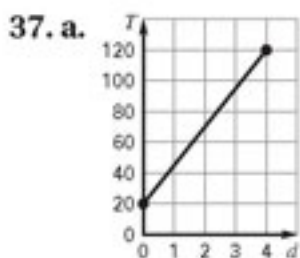
23. C 25. B



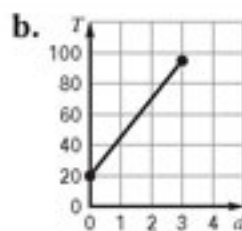
3.2 Problem Solving



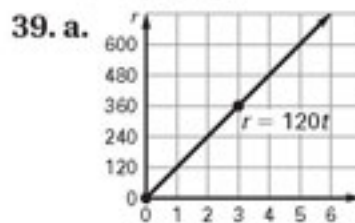
domain: $0 \leq f \leq 4$,
range: $0 \leq w \leq 2$;
2 lb



domain: $0 \leq d \leq 4$,
range: $20 \leq T \leq 120$;
 120°C

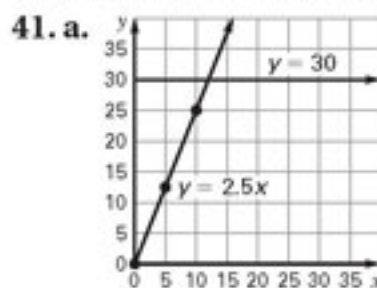


domain: $0 \leq d \leq 3$,
range: $20 \leq T \leq 95$;
3 km



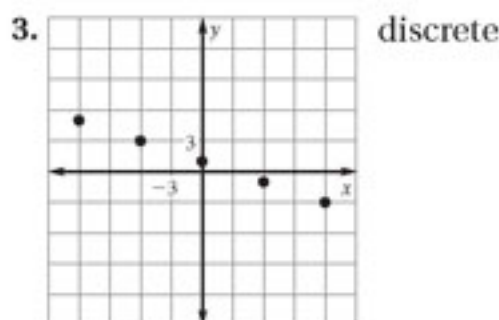
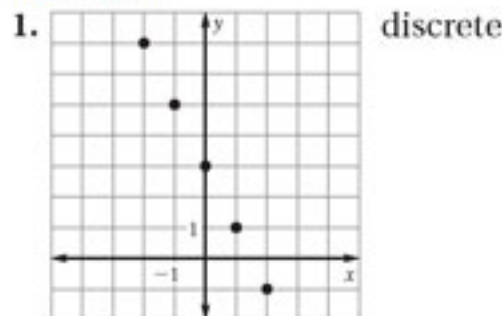
domain: $t \geq 0$,
range: $r \geq 0$

b. Domain: $0 \leq t \leq 4$, range: $0 \leq r \leq 480$; the graph was a ray, but is now a segment.



3.2 Graphing Calculator Activity 1.5.6 3. -5.3

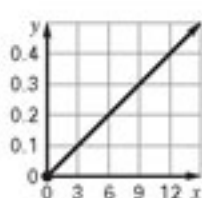
Extension



5.
7. Discrete; you can only rent a whole number of DVDs.

Selected Answers

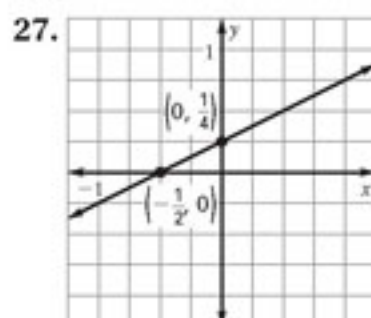
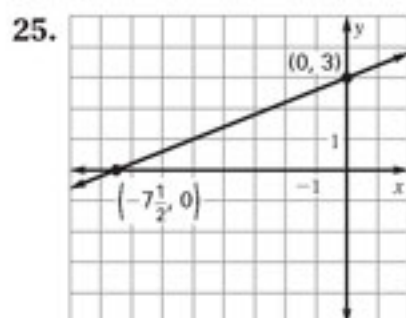
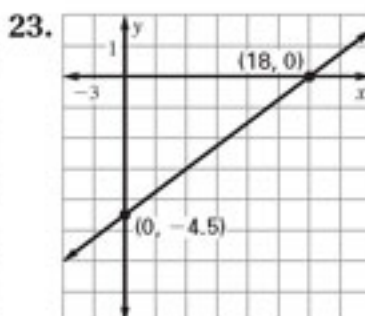
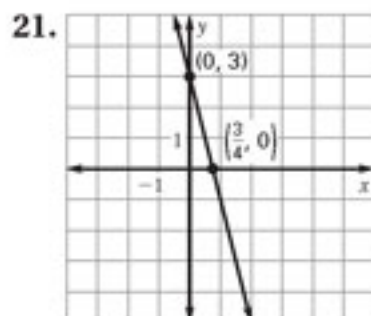
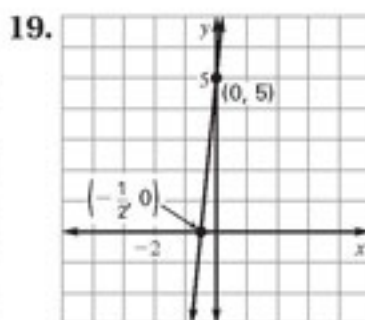
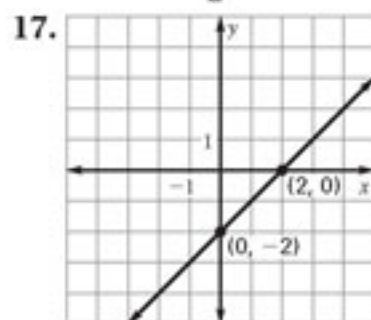
9. Continuous; it makes sense to talk about the weight of water for any volume of water.



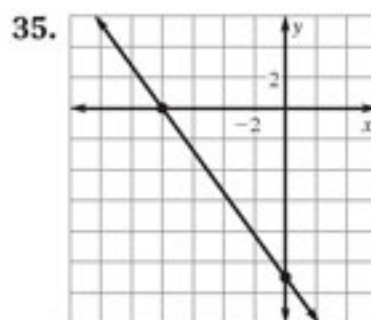
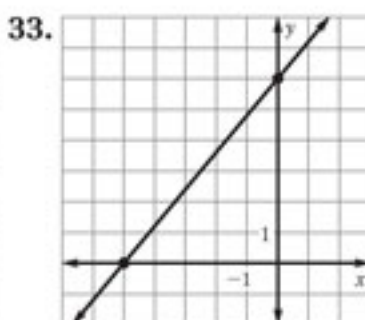
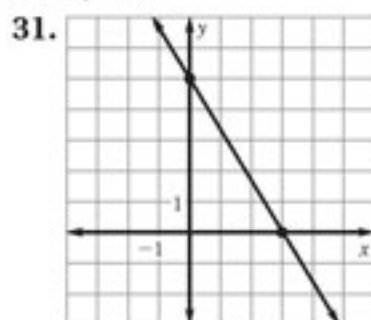
about 0.12

3.3 Skill Practice 1. x -intercept 3. The intercepts are switched around; the x -intercept is -2 , and the y -intercept is 1. 5. 3, -3 7. 1, 4 9. 12, -3

11. 64, 4 13. $\frac{1}{2}$, 7 15. 20, -12



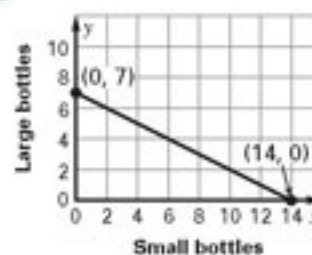
29. 3, -2



39. B 41. Yes; yes; a horizontal line does not have an x -intercept if $y \neq 0$, a vertical line does not have a y -intercept if $x \neq 0$.

3.3 Problem Solving

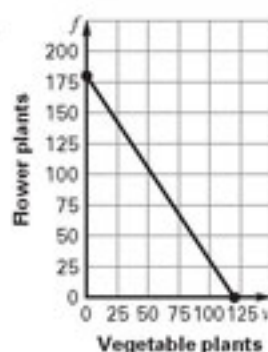
45. a. $x = 14, y = 7$



b. *Sample answer:* 2 and 6, 4 and 5, 6 and 4

47. a. v -intercept: 120, f -intercept: 180; the v -intercept means there are no flowers planted, the f -intercept means there are no vegetables planted.

b. domain: $0 \leq v \leq 120$, range: $0 \leq f \leq 180$



c. 60 ft^2 49. 12.5 h. *Sample answer:* Since the tank will be empty when it needs to be refilled, replace w in the function with 0 and then solve the resulting equation for t .

3.4 Skill Practice 1. slope 3. The denominator should be $2 - 5$, not $5 - 2$; $m = \frac{6 - 3}{2 - 5} = \frac{3}{-3} = -1$.

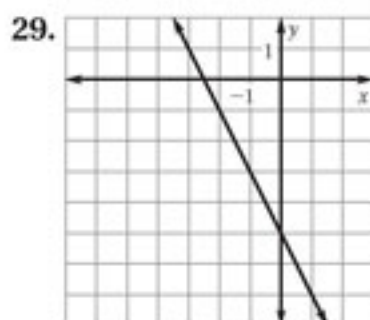
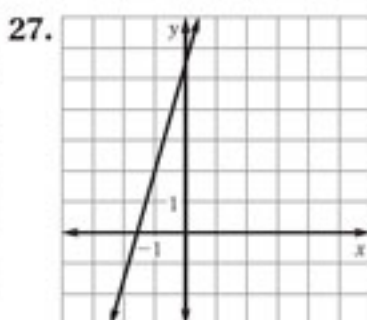
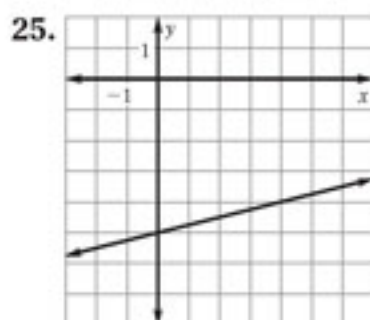
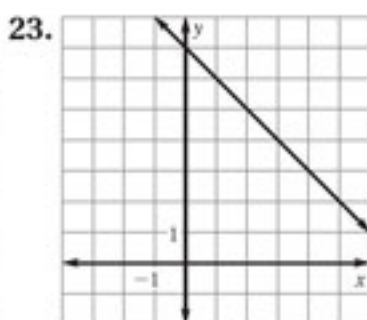
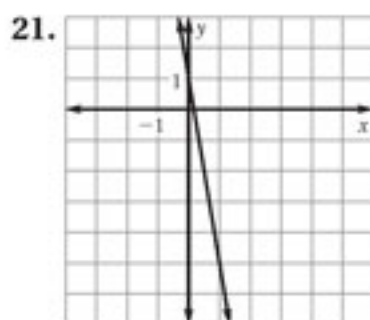
5. undefined 7. The slope was calculated using $\frac{\text{run}}{\text{rise}}$, not $\frac{\text{rise}}{\text{run}}$; $m = \frac{0 - 3}{12 - 6} = \frac{-3}{6} = -\frac{1}{2}$.

9. undefined 11. $-\frac{5}{2}$ 13. 1 15. 0 19. \$2.25 per day; it costs \$2.25 per day to rent a movie. 21. 0.3 23. 0.1 25. -15 27. -2 29. -3 31. -15 33. Yes; the slope of the line containing both points is -3 .

3.4 Problem Solving 37. a. 0 h to 1.5 h b. 4.65 h to 8.95 h 39. *Sample answer:* The elevation of the hiker increases for about 60 minutes, then stays the same for about 30 minutes, then decreases for the last 60 minutes.

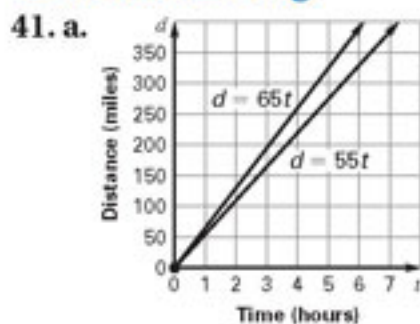
3.5 Skill Practice 1. parallel 3. 2, 1 5. $-3, 6$ 7. $\frac{2}{3}, -1$ 11. $y = -4x + 1$; $-4, 1$ 13. $y = 2x + 3$; 2, 3 15. $y = -\frac{2}{5}x - 2$; $-\frac{2}{5}, -2$ 17. B 19. C

Selected Answers

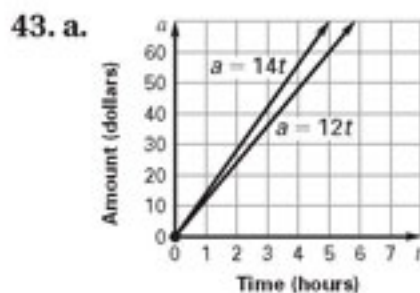


31. red, blue, and green
33. Parallel; the slopes are both 3. 35. Not parallel; the slopes are -4 and $-\frac{1}{4}$.
37. -2

3.5 Problem Solving



b. 30 mi

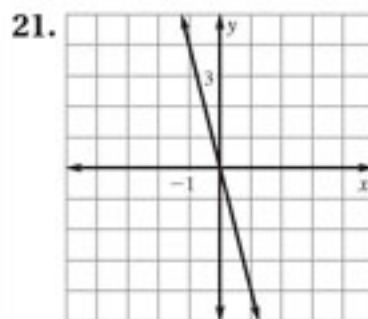
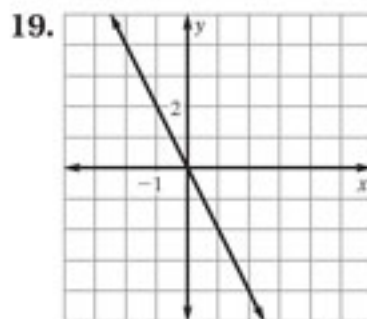
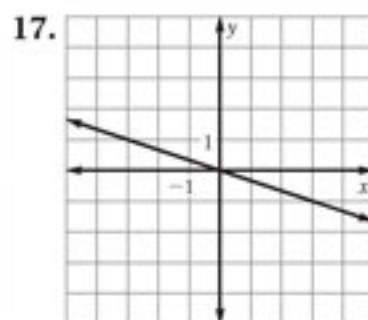
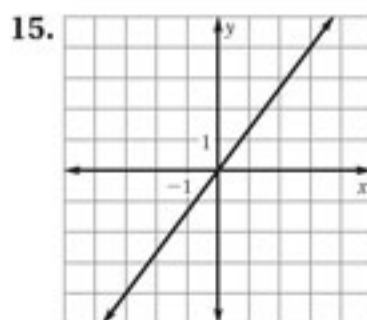
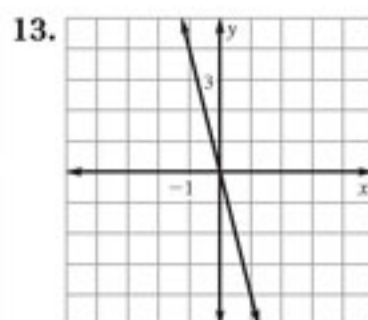
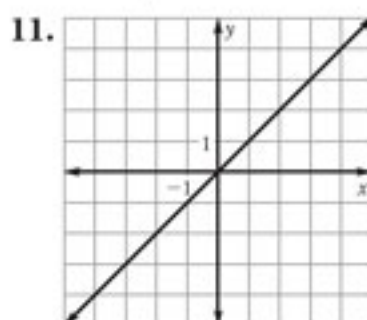


The slopes are the amount of money earned per hour, the a -intercepts show the amount of money made at 0 hours.
b. \$80

Extension 1. -2 3. -4 5. $\frac{1}{2}$ 7. 2000 9. 2000

3.6 Skill Practice 1. direct variation

3. direct variation; 1 5. not direct variation 7. direct variation; -4



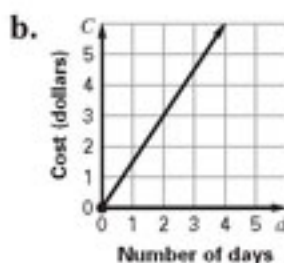
23. $y = -x$; -8 25. $y = -\frac{3}{4}x$; -6 27. not direct variation
29. $y = 3x$ 31. $y = \frac{1}{2}x$ 33. $y = x$ 35. $y = 4x$
37. $y = -\frac{7}{26}x$

3.6 Problem Solving 41. a. $v = \frac{3}{2}t$ b. 12 h

43. a. Compare the ratios, $\frac{f}{w}$, for all data pairs (w, f) . Since the ratios all equal 0.25, f varies directly with w .
b. $f = 0.25w$; \$.25 per pound; \$7

45. a. Sample answer:

d	C (dollars)
1	1.5
2	3
3	4.5



c. $C = 1.5d$; yes; it is in the form $y = ax$; \$33.

Selected Answers

3.6 Problem Solving Workshop 1. 110 tbsp.

Sample answer: Use the proportion $\frac{20}{100} = \frac{22}{x}$.

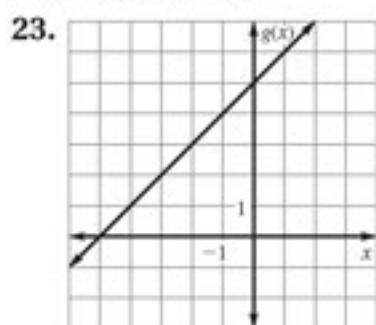
3. Because 7 is half of 14, you can take half of 5.88 to find 7 words cost \$2.94. Because 21 is 3 times 7, multiply \$2.94 by 3 to get \$8.82. 5. The proportion should be $\frac{6}{96} = \frac{10}{x}$, $\frac{6}{96} = \frac{10}{x}$, $960 = 6x$, $x = 160$.

3.7 Skill Practice 1. function notation

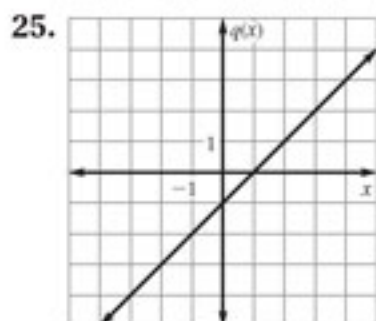
3. -23, 1, 37 5. 14, -2, -26 7. 13, 0, -19.5

9. $2\frac{1}{5}$, 3, $4\frac{1}{5}$ 11. $-7\frac{1}{2}$, -6, $-3\frac{3}{4}$ 15. 3 17. -6

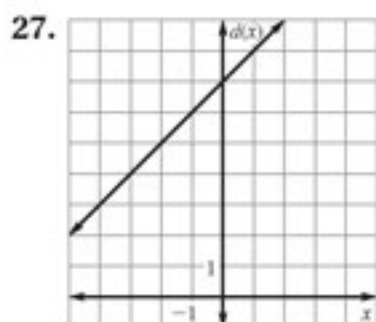
19. -7.5 21. 3.5



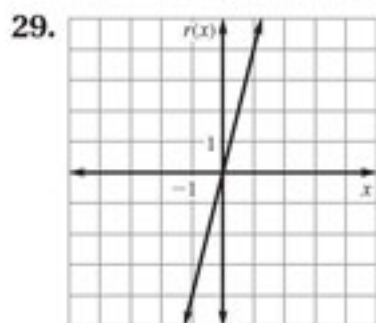
Because the graphs of g and f have the same slope, $m = 1$, the lines are parallel. The y -intercept of the graph of g is 5 more than the y -intercept of the graph of f .



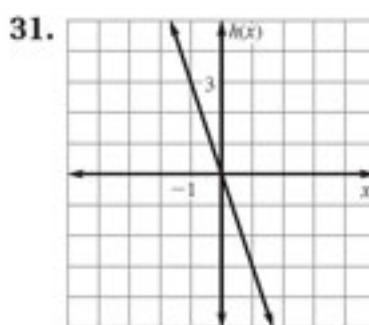
Because the graphs of q and f have the same slope, $m = 1$, the lines are parallel. The y -intercept of the graph of q is 1 less than the y -intercept of the graph of f .



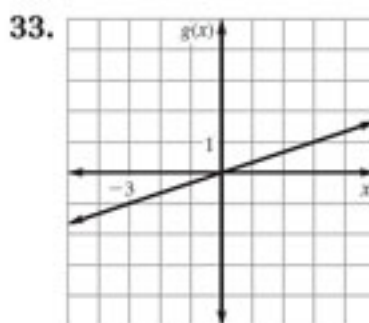
Because the graphs of d and f have the same slope, $m = 1$, the lines are parallel. The y -intercept of the graph of d is 7 more than the y -intercept of the graph of f .



Because the slope of the graph of r is greater than the slope of the graph of f , the graph of r rises faster from left to right. The y -intercept for both graphs is 0, so both lines pass through the origin.



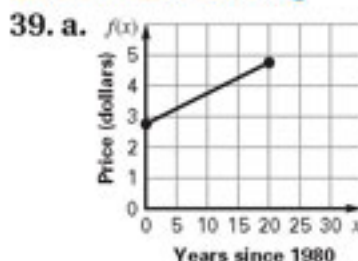
Because the slope of the graph of h is negative, the graph of h falls from left to right. The y -intercept for both graphs is 0, so both lines pass through the origin.



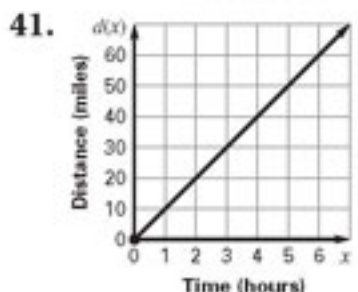
Because the slope of the graph of g is less than the slope of the graph of f , the graph of g rises slower from left to right. The y -intercept for both graphs is 0, so both lines pass through the origin.

37. Since the graphs of g and h have the same slope, $m = 0$, the lines are parallel. The y -intercept of the graph of h is 2 less than the y -intercept of the graph of g .

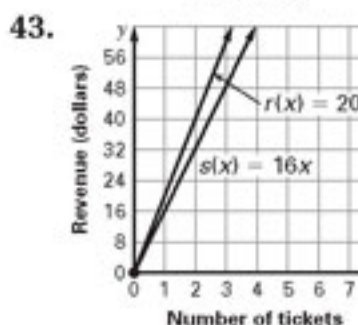
3.7 Problem Solving



domain: $0 \leq x \leq 20$,
range: $2.75 \leq f(x) \leq 4.75$
b. 18; in 1998, 18 years after 1980, the price of a movie ticket was \$4.55.



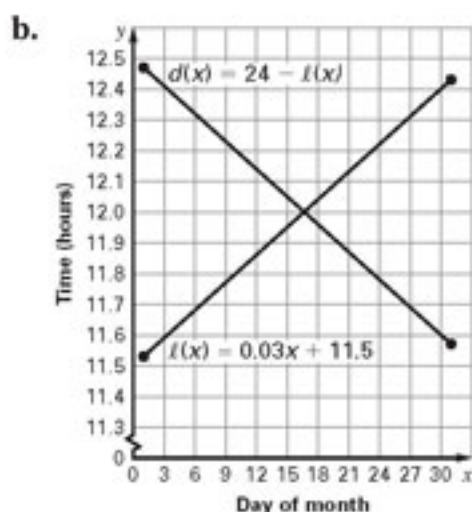
Domain: $x \geq 0$,
range: $d(x) \geq 0$;
1.5 h; substitute 15 for $d(x)$ to get the equation $15 = 10x$, solve for x .



Because the slope of the graph of r is greater than the slope of the graph of s , the graph of r rises faster from left to right. The y -intercept for both graphs is 0, so both lines pass through the origin.

45. a. See graph in part (b); domain: $1 \leq x \leq 31$, range: $11.53 \leq \ell(x) \leq 12.43$.

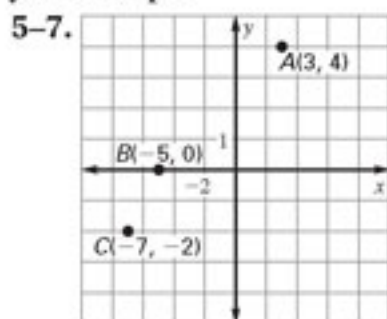
Selected Answers



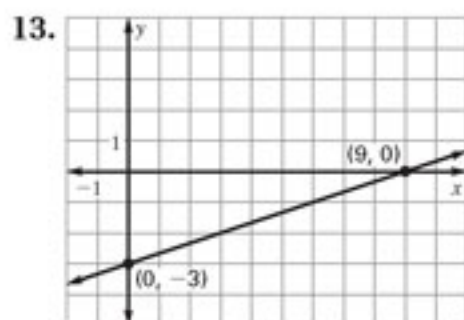
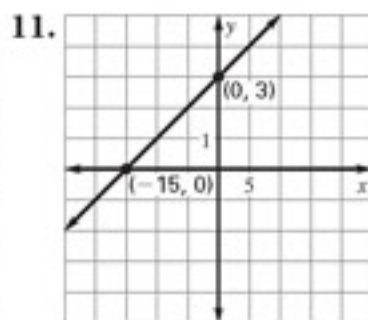
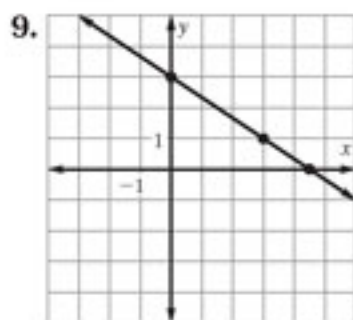
domain:
 $11.53 \leq l(x) \leq 12.43$,
 range:
 $11.57 \leq d(x) \leq 12.47$

3.7 Graphing Calculator Activity 1. $x = 4$ 3. $q = -3$
 5. $c = -6$ 7. $x = 1$ 9. $x = -3$ 11. $x = -18$ 13. *Sample answer:* Set each side of the equation equal to y to create two functions. Graph each function and look for the intersection. The solution is the x -value of the point of intersection.

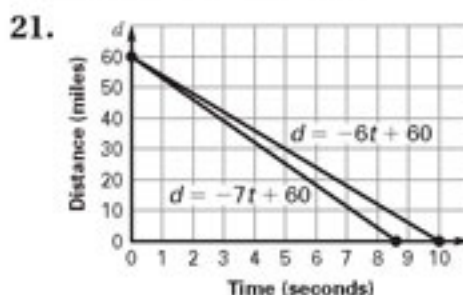
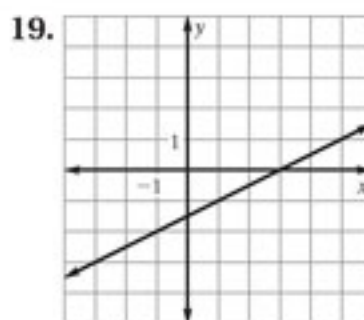
Chapter Review 1. slope 3. *Sample answer:* Make a table, use intercepts, and use the slope and y -intercept.



5. Quadrant I
 7. Quadrant III

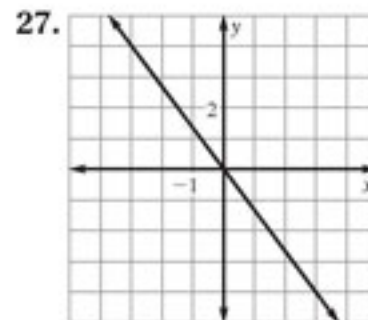
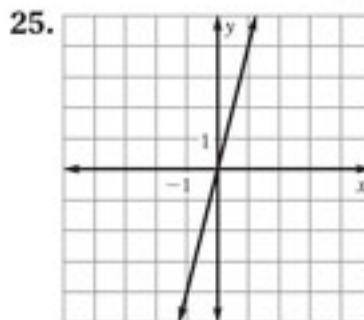


15. $-\frac{1}{3}$ 17. -2

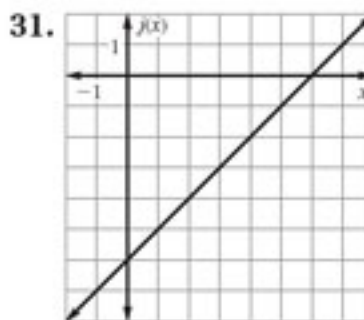


about 1.4 sec

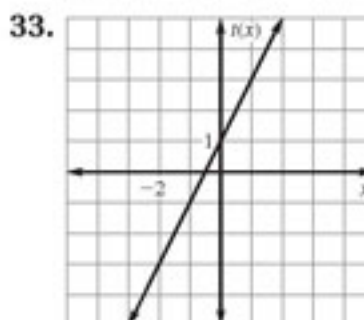
23. direct variation; $-\frac{1}{2}$



29. 11

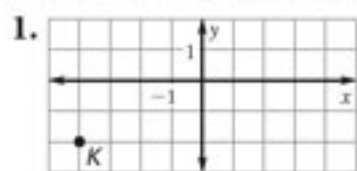


Because the graphs of j and f have the same slope, $m = 1$, the lines are parallel. The y -intercept of the graph of j is 6 less than the y -intercept of the graph of f .

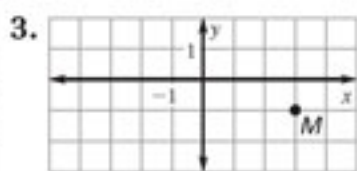


Because the slope of the graph of t is greater than the slope of the graph of f , the graph of t rises faster from left to right. The y -intercept of the graph of t is 1 more than the y -intercept of the graph of f .

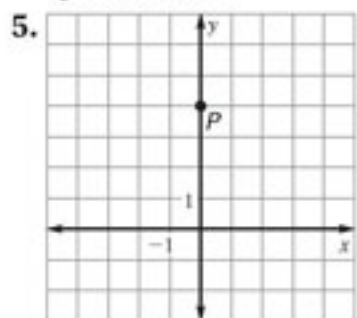
Chapter 3 Extra Practice



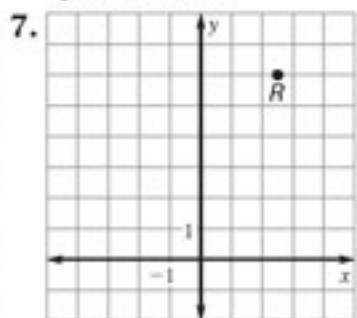
Quadrant III



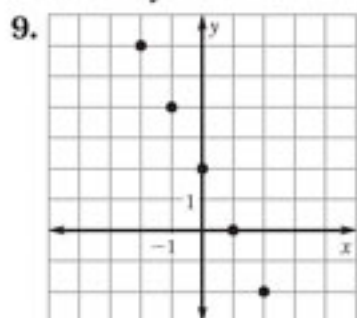
Quadrant IV



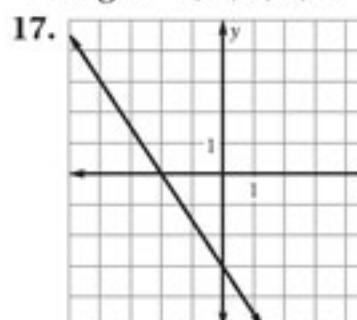
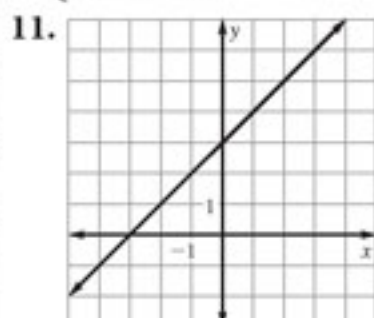
on the y-axis



Quadrant I

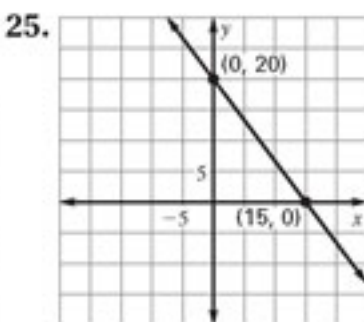
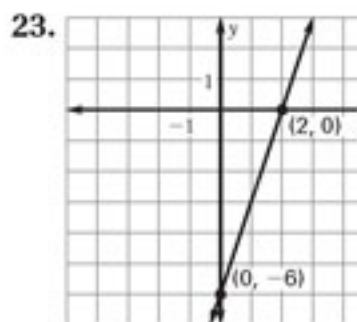


range: $-2, 0, 2, 4, 6$



19. x-intercept: 6,
y-intercept: -12

21. x-intercept: -1 ,
y-intercept: $\frac{8}{3}$

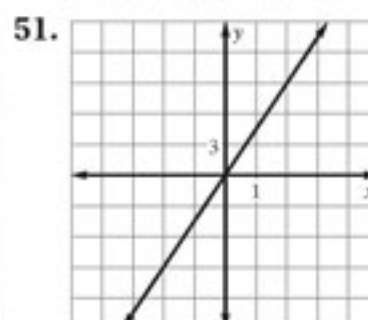
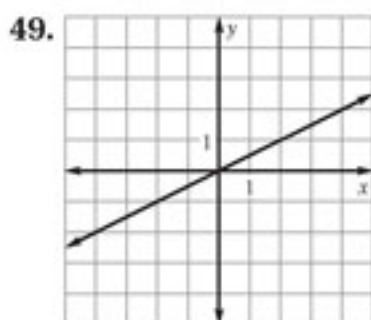
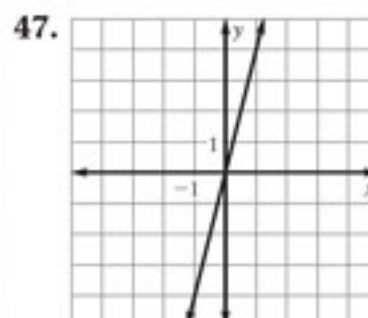
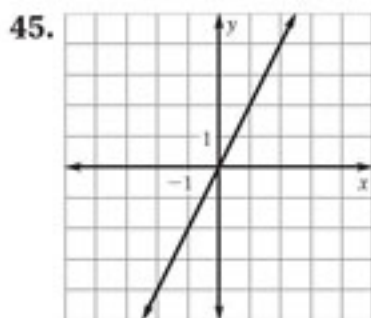
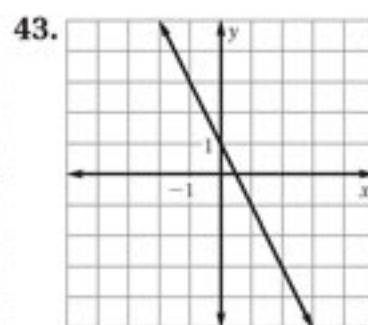
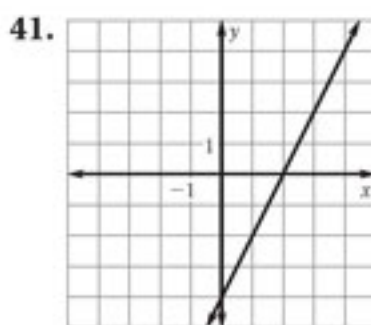


27. 3 29. $-\frac{7}{3}$ 31. no slope 33. slope: 7, y-intercept: 8

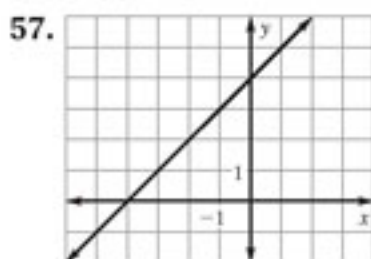
35. slope: -4 , y-intercept: 3 37. $y = -2x + 8$; slope: -2 ,

y-intercept: 8 39. $y = -\frac{5}{2}x + 5$; slope: $-\frac{5}{2}$,

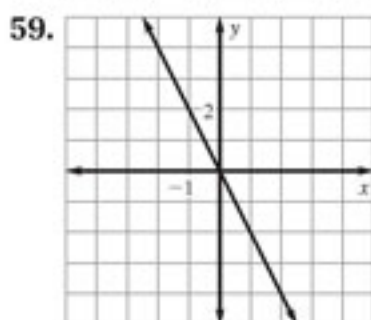
y-intercept: 5



53. 2 55. -4



The graph is a vertical translation 4 units up of $f(x) = x$.



The graph is a vertical stretch by a factor of 2 with a reflection in the x-axis of $f(x) = x$.