

Answers to Exercises

■ Lesson 1.1

1. 9 2. 18 3. 13 4. 4
5. 6 6. 9 7. 18 8. 24
9. 16 10. 3 11. 5 12. 7
13. 6 14. 11 15. 1 16. 22
17. 15 18. 5 19. 9 20. 2
21. 4 22. 13 23. 3 24. 4
25. 18 in. 26. 20 in. 27. 12 in. 28. 16
29. \$28 30. \$0.30

■ Lesson 1.2

1. 9 2. 15 3. 8 4. 23
5. 3 6. 13 7. 2 8. 3
9. 4 10. 8 11. 1 12. 20
13. 0 14. 6 15. 16 16. 30
17. 15 18. 17 19. 5 20. 9
21. 7 22. 4 23. 10 24. 12
25. a. $a + b + c + d$
b. 30 c. 21 d. 23
26. \$2.50 27. 32

■ Lesson 1.3

1. 3^4 2. 7^2 3. x^3 4. y^5
5. 3^w 6. $(6x)^3$ 7. 4^5 8. a^3
9. 2^2 10. x^8 11. 5^4 12. $(3x)^4$
13. 8 14. 100 15. 3 16. 31
17. 5 18. 16 19. 50 20. 11
21. 36 22. 27 23. 22 24. 7
25. $\approx 4.19 \text{ ft}^3$ 26. 8 ft^3
27. $\approx 75.36 \text{ in.}^3$ 28. $\approx 28.26 \text{ ft}^2$

■ Lesson 1.4

1. 4 2. 7 3. 5 4. 10
5. 14 6. 3 7. 11 8. 8
9. 9 10. 13 11. 6 12. 2
13. 11 14. 3 15. 0 16. 40
17. 20 18. 7 19. 8 20. 4
21. 23 22. 2 23. 3 24. 1
25. Calculator 1 26. Calculator 1
27. Calculator 2 28. Calculator 1
29. $\frac{51+50+58}{3}$; 53 ft
30. $17 + 17(0.06)$; \$18.02
31. $3 \cdot 4 \cdot 2 + 1 \cdot 3 \cdot 2$; 30 ft^3

■ Lesson 1.5

1. No 2. No 3. Yes 4. No
5. Yes 6. No 7. Yes 8. No
9. Yes

10. What number minus 5 gives 3?; 8

11. What number plus 2 gives 6?; 4

12. What number plus 4 gives 6?; 2

13. What number minus 2 gives 5?; 7

14. What number times 4 gives 20?; 5

15. What number times 3 gives 9?; 3

16. What number divided by 2 gives 3?; 6

17. What number divided by 3 gives 4?; 12

18. What number cubed gives 8?; 2

19. Yes 20. No 21. No 22. No

23. Yes 24. Yes 25. No 26. Yes

27. Yes

28. 8 is the width in inches of a new locker; x is how many new lockers can be installed; 144 is the length in inches of the space available for new lockers

29. 14 is the number of lamps; x is watts in 1 lamp; 14,000 is the total watts

30. 10 is width in miles of crust; 1800 is width in miles of mantle; x is width in miles of outer core; 800 is radius in miles of inner core; 4010 is radius in miles of Earth.

■ Lesson 1.6

1. $x + 4$ 2. $x - 6$ 3. $7 - x$
4. $x + 2$ 5. $5x$ 6. $\frac{1}{3}x$
7. $\frac{x}{8}$ 8. $9 + 2x$ 9. $\frac{x-2}{3}$
10. $3 + 10x$ 11. $5(x + 1)$ 12. $\frac{x+5}{2}$
13. $x + 7 = 10$ 14. $y + 6 = 13$ 15. $y + 8 \geq 10$
16. $a - 2 = 8$ 17. $z - 6 < 21$ 18. $13 - b = 2$
19. $11x = 22$ 20. $14 < 7x$ 21. $\frac{a}{2} > 9$
22. $\frac{t}{3} = 9$ 23. $4b + 1 = 17$ 24. $6a - 3 = 9$
25. $6 \cdot 10 - 2 \cdot 5$ 26. $12 \cdot 6 + \frac{1}{2}\pi 3^2$
27. a 28. a 29. b 30. a

Lesson 1.7

- 70
- $$\boxed{\text{Typing speed}} \cdot \boxed{\text{Time}} = \boxed{\text{Word length}}$$
- Typing speed = 20 words per minute
 Time = x minutes
 Word length = 1200 words
- $20x = 1200$ 5. 60
- Yes. It will take 60 min to type. The kick-off doesn't start for 70 minutes.
- \$300

- $$\boxed{\text{Price per car}} \cdot \boxed{\text{Number of cars}} = \boxed{\text{Money needed}}$$
- Price per car: 4 dollars
 Number of cars: x cars
 Money needed: 300 dollars

10. $4x = 300$ 11. 75

12. 75 13. $1\frac{1}{2}$

- $$\boxed{\text{Distance to aunt's}} = \boxed{\text{Speed of car}} \cdot \boxed{\text{Time}}$$

- Distance to aunt's: 110 miles
 Speed of car: 55 miles per hour
 Time: x hours

16. $110 = 55x$ 17. 2 18. No. $\frac{1}{2}$ hour late

19. 10 in.

- $$\boxed{\text{Length}} \cdot \boxed{\text{Height}} \cdot \boxed{\text{Width}} = \boxed{\text{Volume}}$$

- Length = 20 inches
 Height = 6 inches
 Width = x inches
 Volume = 960 in.^3

22. $20 \cdot 6 \cdot x = 960$ 23. 8

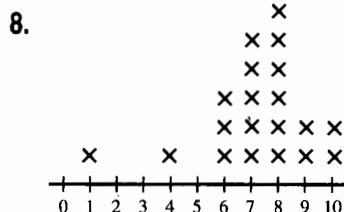
- Yes, the box is only 8 in. wide and the shelf is 10 in. wide.

Lesson 1.8

- 12th 2. 10th and 11th 3. Bus
- 1966 5. 15 6. Elementary

7. Score Tally Frequency

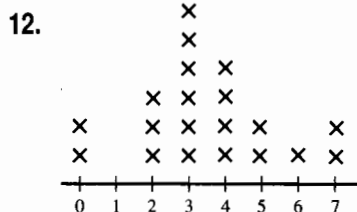
10		2
9		2
8		6
7		5
6		3
5		0
4		1
3		0
2		0
1		1
0		0



9. 8 10. 2

11. Hours Tally Frequency

7		2
6		1
5		2
4		4
3		6
2		3
1		0
0		2



13. 3 hrs 14. 2 15. 1986 16. 1989

17. 1988 18. 1989

Lesson 2.1

- 1, 3, 5 2. -2, 0, 4 3. -6, -5, -3
- 4, 0, 2 5. -1.5, -1, 2.5
- $-\frac{1}{3}, \frac{3}{4}, 5$
- 2, $-\frac{3}{4}, -\frac{1}{2}$ 8. -1.2, 3, 5
- 1.5, 3.2, 5.4 10. -3, 0, 3.1
- 2, -1.5, -1 12. -3, -1, 4
- 5 14. 3 15. -2.1 16. 3.4
- 17 18. -100 19. 8 20. 4
- $\frac{1}{2}$ 22. 2.3 23. $\frac{3}{4}$ 24. 1.8
- July 26. Dec. 27. You 28. Paul
- 1986 30. 1990

Lesson 2.2

1. 8 2. 6 3. 1 4. -3
5. -2 6. 4 7. -7 8. -6
9. 0 10. 2 11. 0 12. -5
13. 7 14. -8 15. 4 16. 6
17. 5 18. -3 19. 8 20. -3
21. -9 22. -11 23. 3 24. 0
25. $2x + 4$ 26. $x - 3$
27. $4x - 2$ 28. $5x$ 29. $3x + 8$
30. $x + 7$ 31. 18 miles
32. Yes, 11 33. 0 34. Yes, \$1500

Lesson 2.3

1. 2 2. 1 3. -2 4. -8
5. -6 6. -15 7. 16 8. 12
9. 3 10. -3 11. 2 12. -11
13. 6 14. 2 15. -3 16. 5
17. -1 18. 5 19. -12 20. -5
21. 1 22. 4 23. 7 24. 15
25. -1 26. 11 27. 3 28. 6
29. -2 30. -5 31. 138 points
32. 48.7 million mi
33. -4° , 8° , -5° , 0° , -1° , 4° ; 2°
34. 29 ft

Lesson 2.4

1. $\begin{bmatrix} 7 & 4 \\ 4 & 3 \end{bmatrix}$ 2. $\begin{bmatrix} -1 & 1 \\ 4 & 2 \end{bmatrix}$
3. $\begin{bmatrix} 3 & 2 & 2 \\ -1 & 5 & -5 \end{bmatrix}$ 4. $\begin{bmatrix} -7 & 6 & 6 \\ -5 & -3 & 4 \end{bmatrix}$
5. $\begin{bmatrix} -5 & 0 & 1 \\ -2 & -1 & 8 \\ 11 & -2 & 5 \end{bmatrix}$ 6. $\begin{bmatrix} 3 & 7 & 6 \\ -1 & -8 & -3 \\ -2 & 6 & 1 \end{bmatrix}$
7. $\begin{bmatrix} -2 & 1 \\ -3 & 1 \end{bmatrix}$ 8. $\begin{bmatrix} 1 & 1 \\ 7 & -3 \end{bmatrix}$
9. $\begin{bmatrix} -2 & 0 & 3 \\ -11 & -5 & -4 \end{bmatrix}$ 10. $\begin{bmatrix} 2 & -10 & 3 \\ 6 & -5 & 10 \end{bmatrix}$
11. $\begin{bmatrix} 0 & -4 & 0 \\ -5 & 5 & 5 \\ -7 & 16 & -8 \end{bmatrix}$ 12. $\begin{bmatrix} 3 & -4 & -8 \\ -7 & 16 & 9 \\ -10 & -13 & -9 \end{bmatrix}$
- 13.

Male Female

Germ. Shep.	3	2
Husky	1	0
Lab	2	5

14. 6 15. 5

16.

Wood. Brass Perc.

10th	7	10	2
11th	16	7	2
12th	14	19	5

17. 9 18. 38
19. Grant: 9, 10;
Lincoln: 12, 4;
Monroe: 10, 6;
Adams: 9, 10

Lesson 2.5

1. -6 2. -20 3. 12 4. $-8x$
5. $-15x$ 6. $-18x$ 7. -8 8. $9x^2$
9. $-3x^2$ 10. $-21x$ 11. $8x^2$ 12. $-24x$
13. 8 14. -12 15. 5 16. 3
17. -1 18. 14 19. -24 20. -2
21. 9 22. 7 23. -3 24. -6
25. $x - 2 \cdot 3$; 69 lb per in.²
26. $W - 10 \cdot 7$; 930 ft³
27. b; 400 28. a; 6

Lesson 2.6

1. $3x + 6$ 2. $4x + 20$ 3. $21 - 7x$
4. $-6x - 24$ 5. $-24 + 3x$ 6. $-2x + 10$
7. $5x - x^2$ 8. $3x + x^2$ 9. $32x - 16$
10. $2x^2 - x$ 11. $-3x^2 - 2x$ 12. $-24x^2 + 4x$
13. $x + 4$ 14. $2x + 7$ 15. $7x^2 - 5$
16. $4x + 3$ 17. $4x - 3$ 18. $-2x - 12$
19. $4x - 4$ 20. $-x^2 + 6x$ 21. $x^2 + 2x$
22. $3x^2 - 5x$ 23. -3 24. $-2x^2 + 3x$
25. $3x - 5$ 26. $4x + 6$
27. $5x - 5 \cdot 3 = 5(x - 3)$
28. $6x + 30$; $6x + 60$
29. a and e 30. b and f

Lesson 2.7

1. 2 2. 8 3. 12 4. 21
5. 20 6. 12 7. -10 8. -3
9. -15 10. $-\frac{10}{3}$ 11. $\frac{1}{28}$ 12. $-\frac{x}{12}$
13. 5 14. 4 15. -2 16. 6
17. 0 18. 2 19. -3 20. 2
21. -18 22. $-\frac{1}{4}$ 23. 1 24. -15
25. 3 26. 550 waves per sec
27. 12 28. 15.75 in.²
29. 6 30. 2 in.

Lesson 2.8

1. \$2.50 per hr 2. \$5
3. \$625 4. 82 points per test
5. 15¢; 12.5¢ 6. 8 7. 2.4 in.
8. $\frac{22}{9}$ 9. $\frac{7}{2}$ 10. $\frac{2}{1}$
11. \$16.49; 51¢ 12. \$4, the series
13. Sunnyside Center: $\frac{1}{5}$, Westside Day Care: $\frac{1}{6}$, Little Ones Day Care: $\frac{1}{4}$
14. Little Ones Day Care 15. $\frac{1}{4}$

Lesson 3.1

1. 12 2. 9 3. 3 4. -1
5. 7 6. -11 7. -4 8. 15
9. -7 10. -4 11. 3 12. 0
13. 3 14. -8 15. -2 16. 6
17. 20 18. -8 19. $-\frac{1}{3}$ 20. $-\frac{1}{2}$
21. $\frac{1}{5}$ 22. 12 23. $\frac{1}{2}$ 24. -3
25. $\frac{5}{2}$ 26. $\frac{5}{3}$ 27. 3 ft
28. 6 29. 8 hr

Lesson 3.2

1. 4 2. 3 3. 5 4. -14
5. 6 6. $-\frac{7}{2}$ 7. -2 8. -4
9. -1 10. 12 11. 2 12. 1
13. 1 14. 3 15. 20 16. -2
17. 5 18. -3 19. 3 20. -1
21. -5 22. -3 23. 4 24. $-\frac{1}{4}$
25. 5 26. 300
27. 17 ft 28. 5 in.

Lesson 3.3

1. 5 2. 10 3. 2 4. -3
5. -7 6. -6 7. $\frac{1}{2}$ 8. 7
9. -1 10. -2 11. 11 12. $-\frac{1}{5}$
13. 8 14. 1 15. 0 16. 5
17. -2 18. 3 19. -3 20. -4
21. -14 22. -2 23. 6 24. -4
25. 12 ft 26. 3 g 27. 11 hr 28. 5

Lesson 3.4

1. $\boxed{\text{Left and right margins}} + 2 \cdot \boxed{\text{Space between pictures}} + 3 \cdot \boxed{\text{Width of picture}} = \boxed{\text{Page width}}$
2. $3\frac{1}{2} + 2 \cdot \frac{1}{4} + 3x = 8\frac{1}{2}$ 3. $1\frac{1}{2}, 1\frac{1}{2}$ in.

4. $3 \cdot \boxed{\text{Width of windows}} + 2 \cdot \boxed{\text{Space between windows}} + 2 \cdot \boxed{\text{Space between windows and edge}} = \boxed{\text{Width of house}}$
5. $3 \cdot 3 + 2x + 2 \cdot 4 = 33$ 6. 8, 8 ft
7. $\boxed{\text{Width of flag}} = \boxed{\text{Width of white stripe}} + \boxed{\text{Width of red stripe}}$
8. $\frac{3}{4} \cdot 48 = 12 + r$ 9. 24, 24 in.
10. $\boxed{\text{Width of tape}} \cdot \boxed{\text{Number of tapes}} = \boxed{\text{Number of rows}} \cdot \boxed{\text{Width of box}}$
11. $\frac{5}{8}t = 2 \cdot 10$ 12. 32, 32
13. $\boxed{\text{1989 population of Nevada}} + \boxed{\text{Nevada population increase}} \cdot \boxed{\text{Number of years}} = \boxed{\text{1989 population of Maine}} + \boxed{\text{Maine population increase}} \cdot \boxed{\text{Number of years}}$
14. $1,206,152 + 157,000t = 1,233,223 + 30,000t$
15. ≈ 0.2 , 1991
16. $\boxed{\text{1989 pop. of Colorado Springs}} + \boxed{\text{Colorado Springs population increase}} \cdot \boxed{\text{Number of years}} = \boxed{\text{1989 pop. of Wichita}} + \boxed{\text{Wichita population increase}} \cdot \boxed{\text{Number of years}}$
17. $284,482 + 5500t = 297,391 + 4700t$
18. ≈ 16.1 , 2006

Lesson 3.5

1. 2.67 2. 1.29 3. 3.75 4. 0.17
5. -2.63 6. -12.33 7. -11.8
8. 5.62 9. 0.34 10. 8.33 11. -0.88
12. -4.33 13. 1.96 14. 1.69 15. -0.16

Lesson 3.5 (continued)

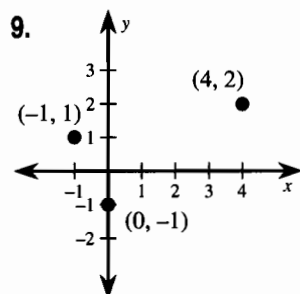
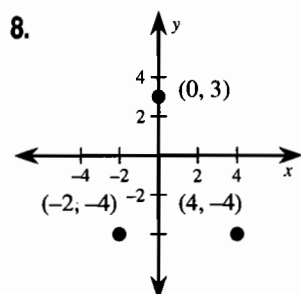
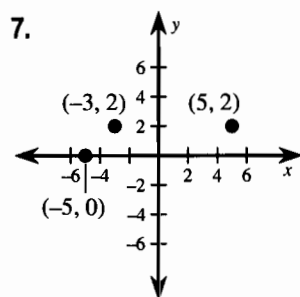
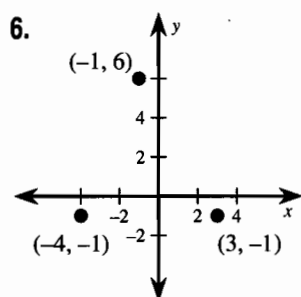
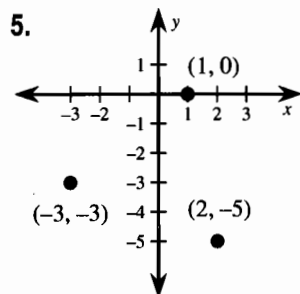
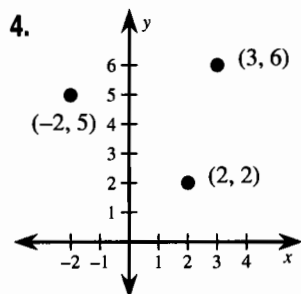
16. -0.47 17. 0.90 18. 6.56 19. -0.88
 20. -31.2 21. -1.82 22. 0.84 23. 10.96
 24. -1.12 25. $\$74.72$ 26. 19.8 sec
 27. ≈ 2.58 28. ≈ 0.74

Lesson 3.6

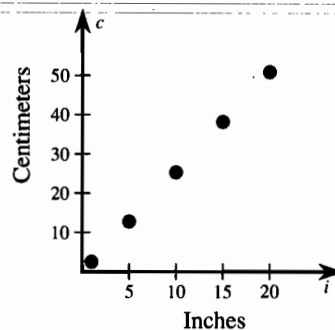
1. $W = \frac{A}{L}$ 2. $r = \frac{C}{2\pi}$ 3. $h = \frac{3V}{\pi r^2}$
 4. $s = \frac{P}{4}$ 5. $r = \frac{d}{t}$ 6. $R = \frac{E}{I}$
 7. $C = \frac{5}{9}(F - 32)$ 8. $C = R - P$
 9. $s = \frac{P}{3}$ 10. $L = \frac{s-2WH}{2W+2H}$
 11. $v = wr$ 12. $r = \frac{s}{\theta}$ 13. 160 ft
 14. 10 cm 15. $12 \text{ yd by } 12 \text{ yd}$
 16. 10 ft 17. 13 in.

Lesson 3.7

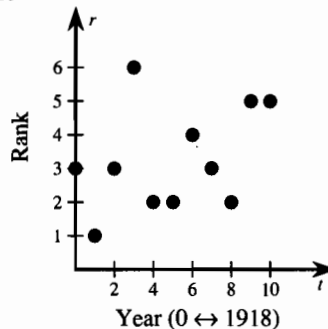
1. $A : (5, 1), B : (0, 4), C : (-3, -2), D : (0, 0)$
 2. $A : (4, -5), B : (-1, 3), C : (0, -2), D : (1, 1)$
 3. $A : (-4, 0), B : (2, 3), C : (1, -1), D : (-3, -5)$



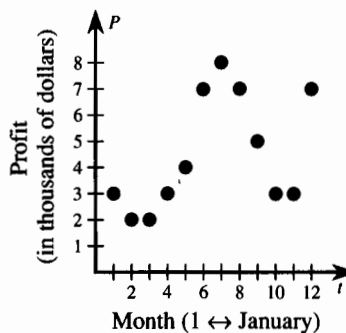
10.



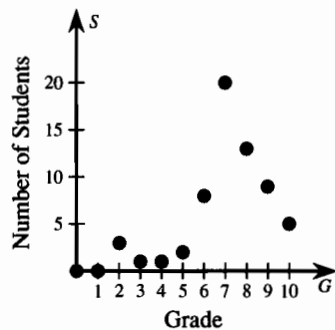
11. 1922



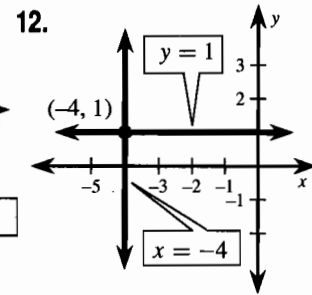
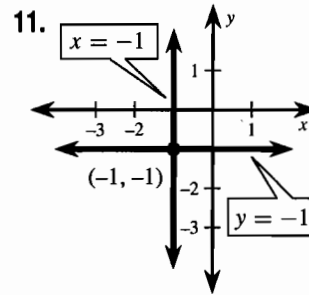
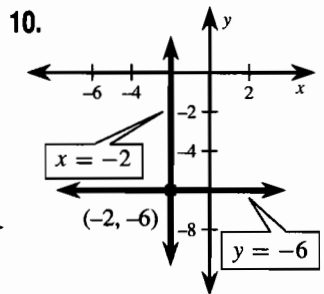
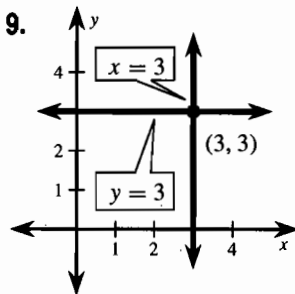
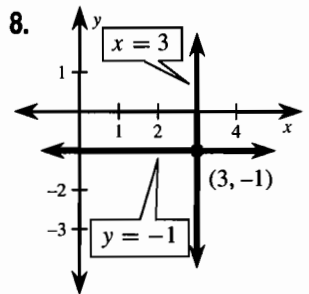
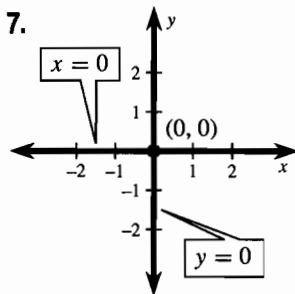
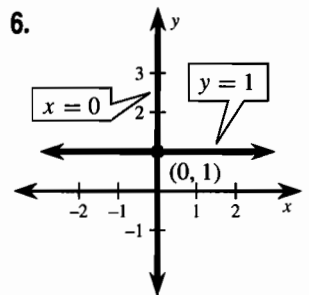
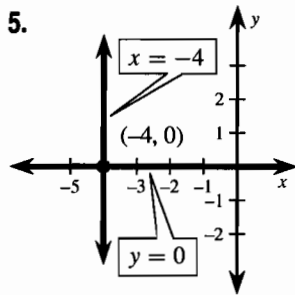
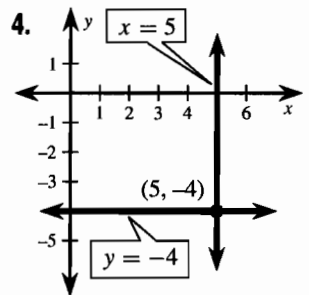
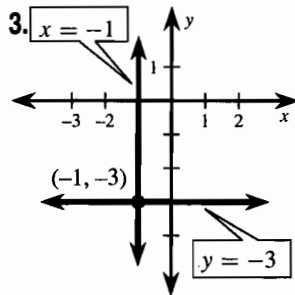
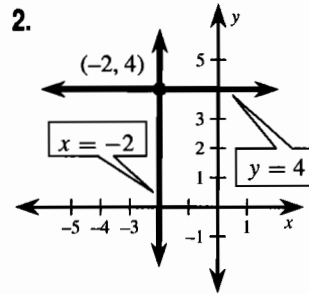
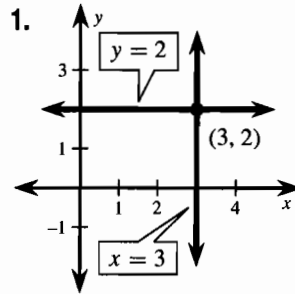
12. July had the greatest profit, February and March the least.



13.



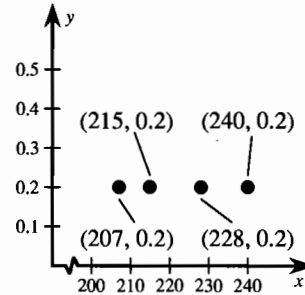
Lesson 4.1



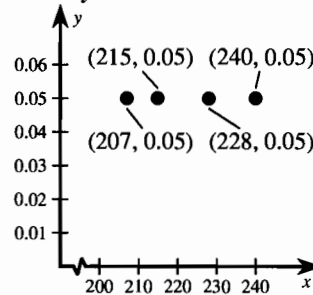
13. $x = 7; y = 2$ 14. $x = 3; y = 10$
 15. $x = -6; y = 4$ 16. $x = -1; y = 12$
 17. $x = 3; y = -2$ 18. $x = 5; y = -9$
 19. $x = -11; y = -4$ 20. $x = -4; y = -7$
 21. $x = 0; y = -5$ 22. $x = 0; y = 8$
 23. $x = 6; y = 0$ 24. $x = -8; y = 0$
 25. 4:00–5:00 Babysat 2 children.
 5:00–6:00 Babysat 3 children.
 6:00–6:30 Babysat no children.
 6:30–8:00 Babysat 4 children.
 8:00–9:00 Babysat 1 child.

26. Yes; 6:00 P.M.–6:30 P.M. 27. 4

28. All ratios are approximately 0.2, so a model is $y = 0.2$.

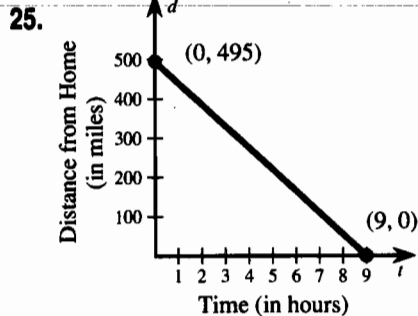
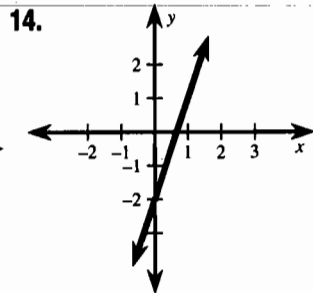
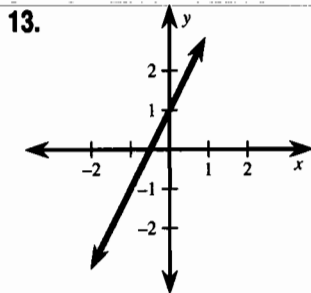


29. All ratios are approximately 0.05, so a model is $y = 0.05$.

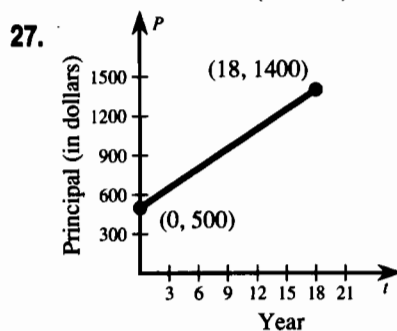
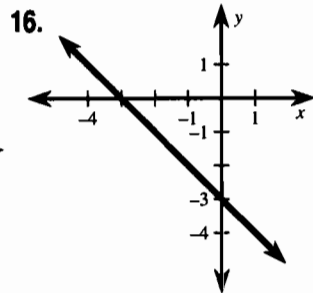
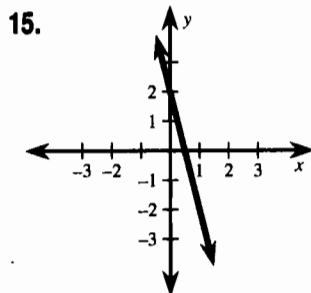


Lesson 4.2

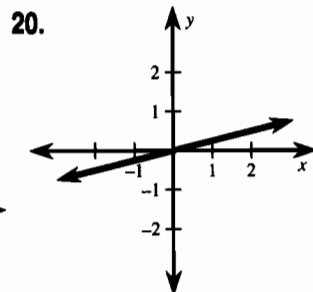
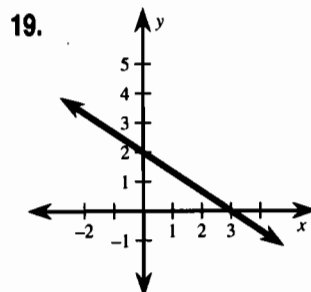
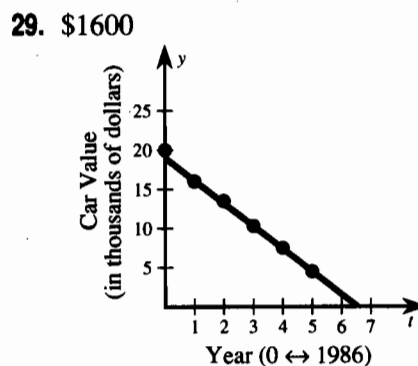
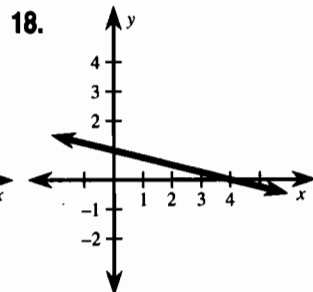
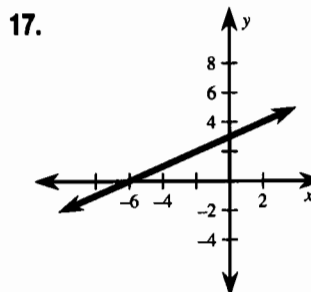
1. a 2. b 3. b 4. a
 5. b 6. a 7. b 8. b
 9. a 10. a 11. b 12. a



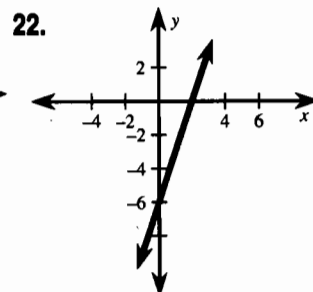
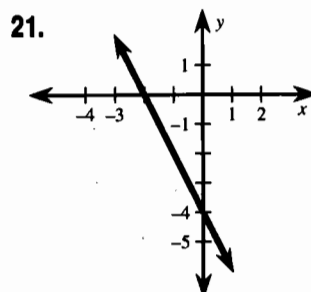
26. 165 mi



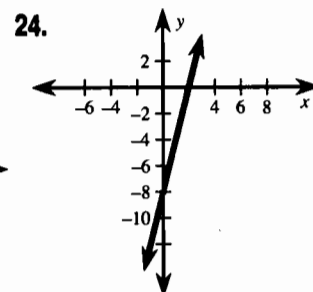
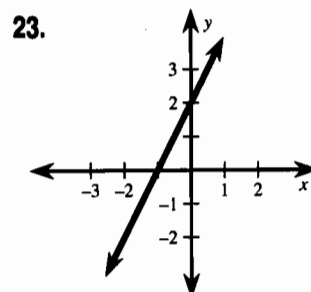
28. \$1400



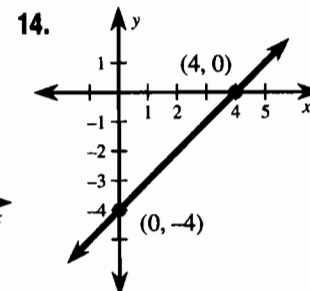
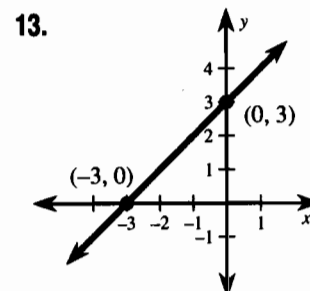
Lesson 4.3



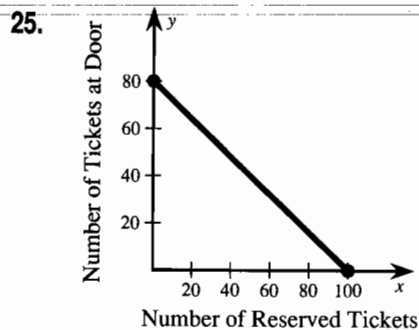
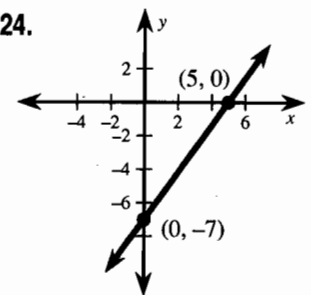
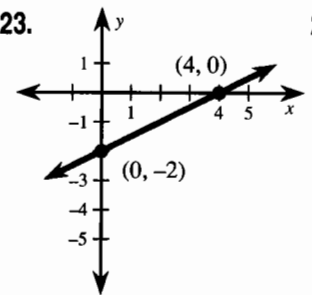
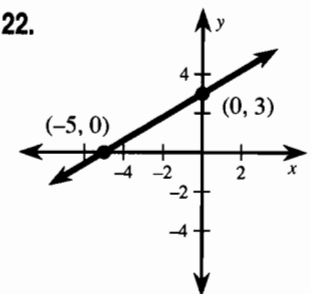
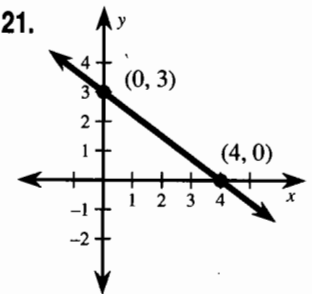
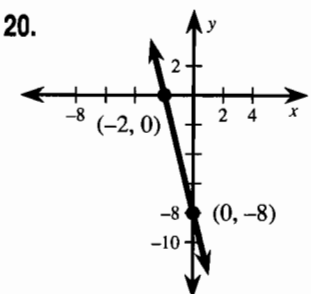
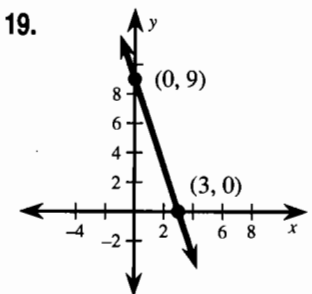
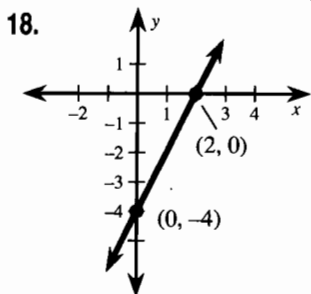
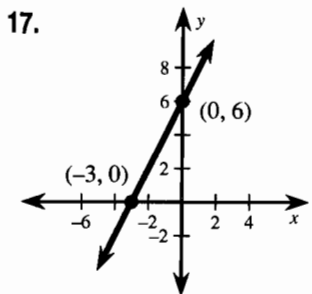
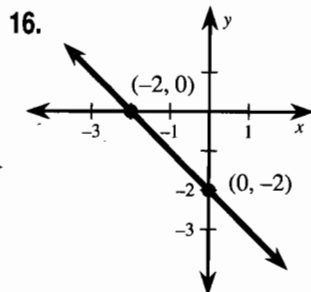
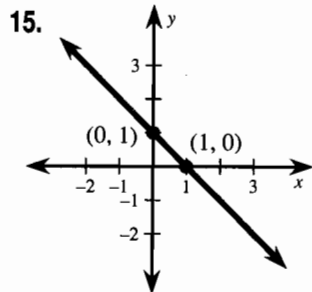
1. (5, 0), (0, 2)
2. (4, 0), (0, -3)
3. (-6, 0), (0, 2)
4. (-3, 0), (0, -1)
5. (-8, 0), (0, 3)
6. (4, 0), (0, 8)
7. (-18, 0), (0, 2)
8. (-3, 0), (0, -9)



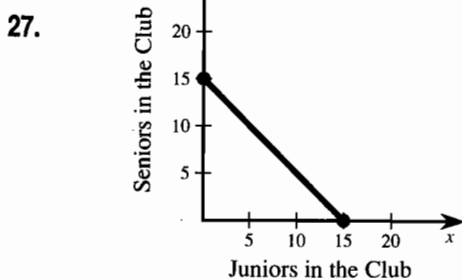
9. (0, 0)
10. (2, 0), (0, -6)
11. $(\frac{1}{2}, 0)$, (0, -4)
12. $(-\frac{1}{3}, 0)$, (0, 2)



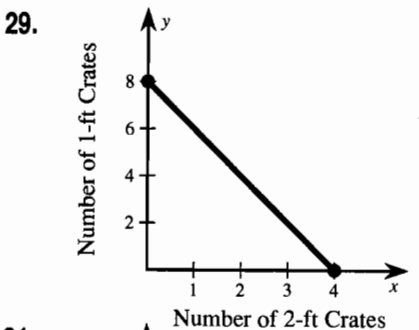
Lesson 4.3 (continued)



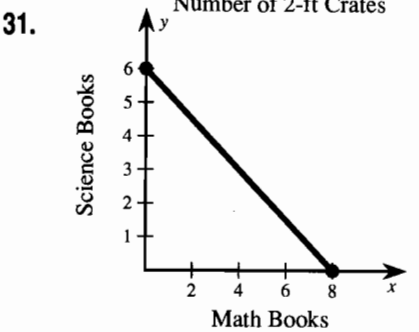
26. 40



28. 6

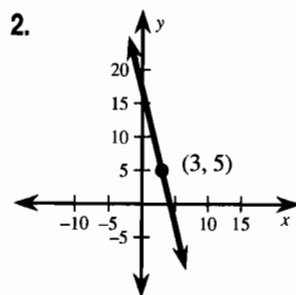
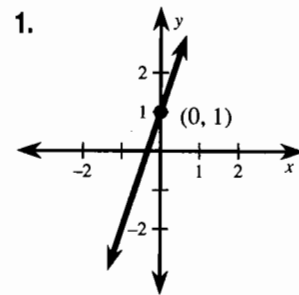


30. 2

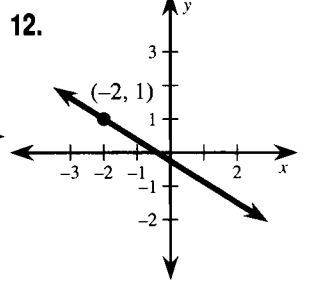
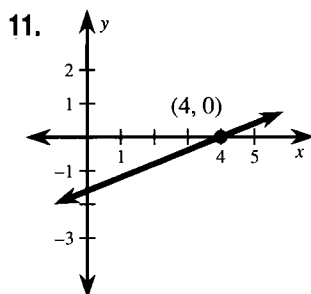
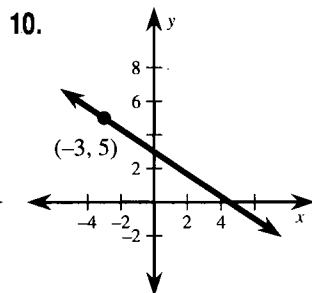
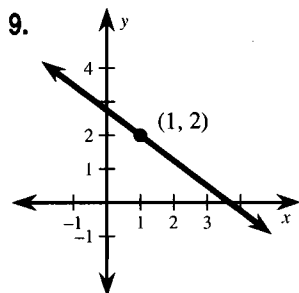
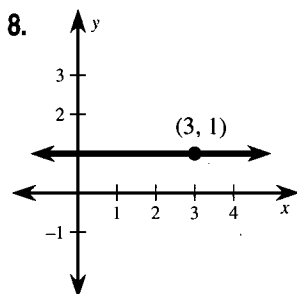
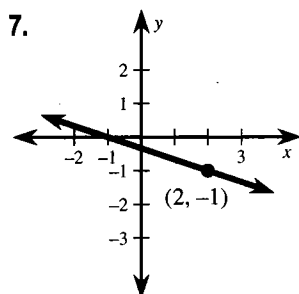
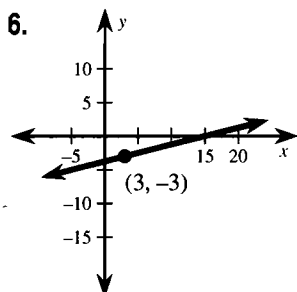
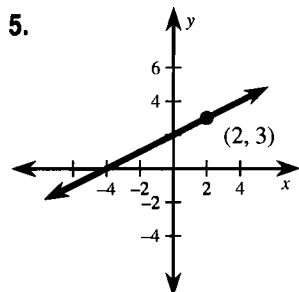
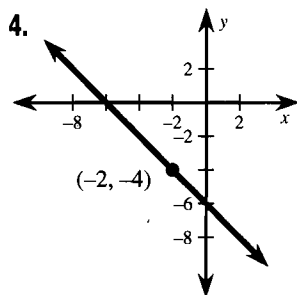
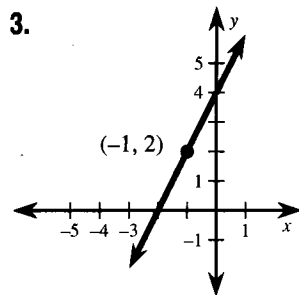


32. 0

Lesson 4.4



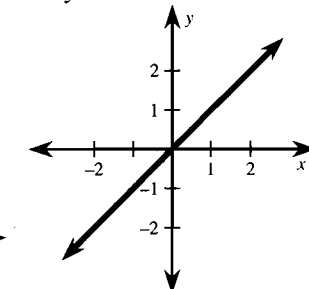
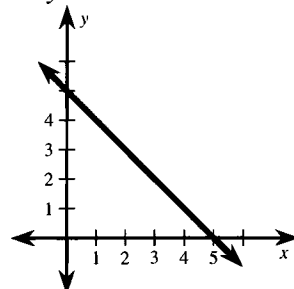
Lesson 4.4 (continued)



13. 4 14. 3 15. -3 16. $\frac{3}{2}$
 17. -2 18. -4 19. 1 20. $-\frac{2}{3}$
 21. $-\frac{6}{7}$ 22. $-\frac{5}{9}$ 23. $\frac{2}{3}$ 24. $-\frac{5}{2}$
 25. 750 26. -25 27. ≈ -0.17
 28. $\frac{4}{3}$ cents per year 29. 8630 30. 4620
 31. 6370 32. 1980-1990

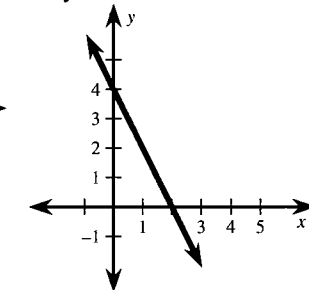
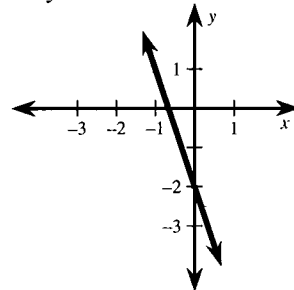
Lesson 4.5

- $m = 3$; y-intercept (0, 2)
- $m = 5$; y-intercept (0, -4)
- $m = -2$; y-intercept (0, 3)
- $m = -\frac{1}{5}$; y-intercept (0, 7)
- $m = -\frac{1}{3}$; y-intercept (0, -2)
- $m = \frac{1}{2}$; y-intercept (0, 2)
- $y = -x + 5$
- $y = x$



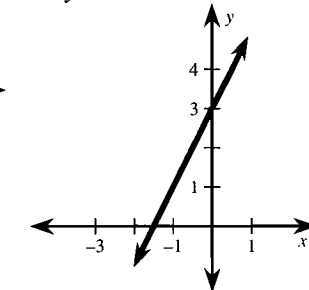
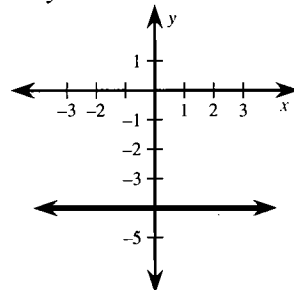
9. $y = -3x - 2$

10. $y = -2x + 4$



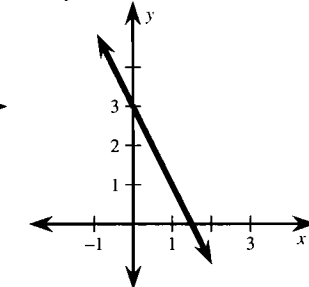
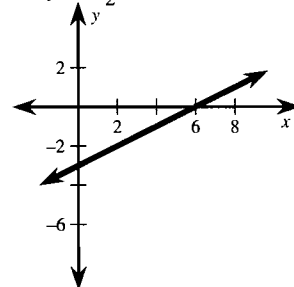
11. $y = -4$

12. $y = 2x + 3$



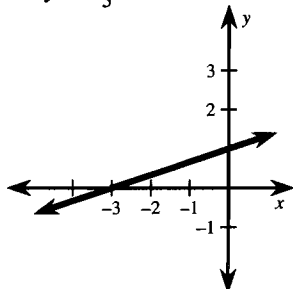
13. $y = \frac{1}{2}x - 3$

14. $y = -2x + 3$

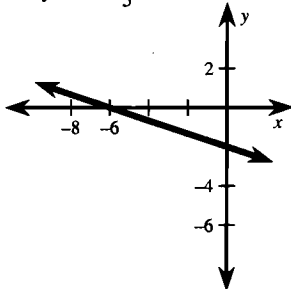


Lesson 4.5 (continued)

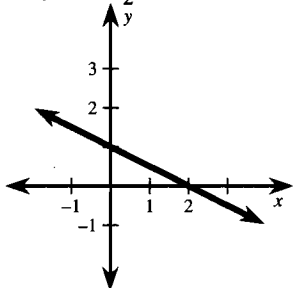
15. $y = \frac{1}{3}x + 1$



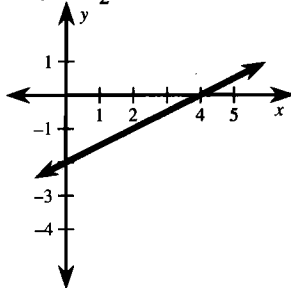
16. $y = -\frac{1}{3}x - 2$



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

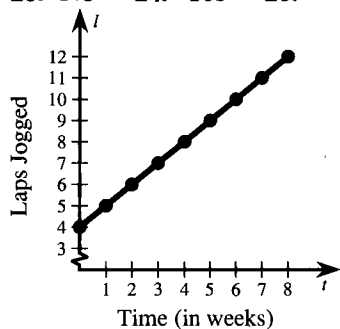


18. $y = \frac{1}{2}x - 2$



19. No 20. No 21. Yes 22. No

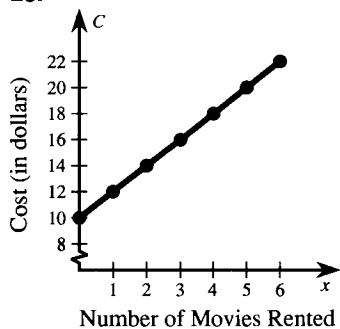
23. No 24. Yes 25.



26. 1; number of laps added per week

27. 4; laps Mario originally jogged

28.



29. 2; cost per movie in dollars

30. 10; membership fee in dollars

31. -1; the wrestler lost an average of 1 lb per week.

32. 190; the wrestler originally weighed 190 lb.

Lesson 4.6

1. $y = 3x - 5$

2. $y = 4x + 6$

3. $y = 7x - 10$

4. $y = -2x - 11$

5. $y = 5x + 9$

6. $y = -7x + 1$

7. $y = -11x - 2$

8. $y = 4x + 1$

9. $y = 3x - 3$

10. $y = -8x + 7$

11. $y = -6x - 1$

12. $y = -10x + 3$

13. -3

14. 4

15. 1

16. -2

17. 2

18. -2

19. 5

20. 1

21. $-\frac{1}{3}$

22. $\frac{1}{2}$

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

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

25. 10 cm 26. 3 in. 27. 1985 28. 1989

29. 100 mi

Lesson 4.7

1. (0, 3)

2. (0, -5)

3. (0, 1)

4. (-8, 0)

5. (4, 0)

6. (-2, 0)

7. (3, 10)

8. (-9, -14)

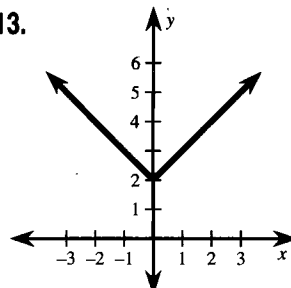
9. (1, 2)

10. (6, -3)

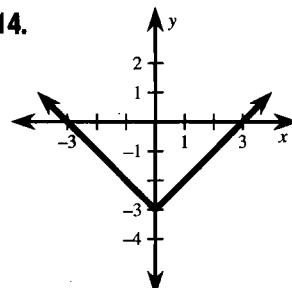
11. (-4, 2)

12. (-7, -1)

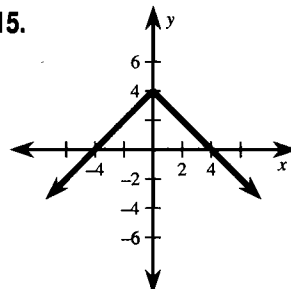
13.



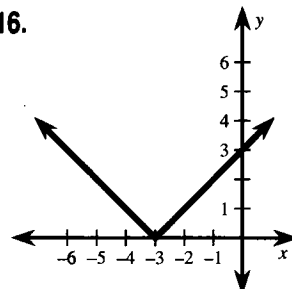
14.



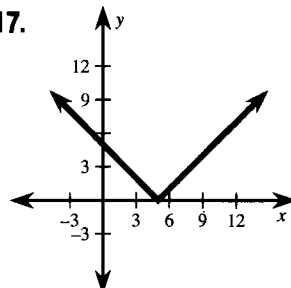
15.



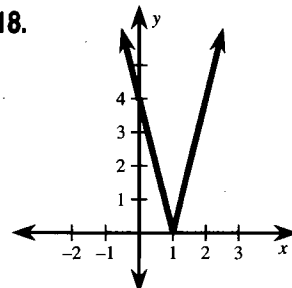
16.



17.

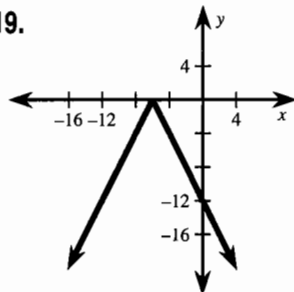


18.

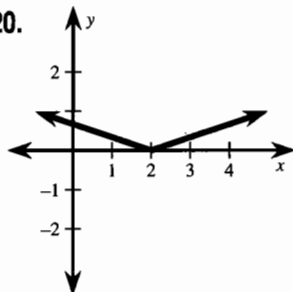


Lesson 4.7 (continued)

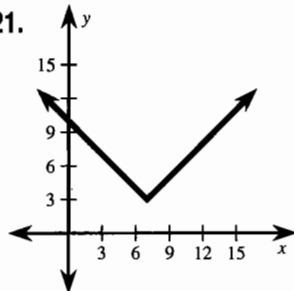
19.



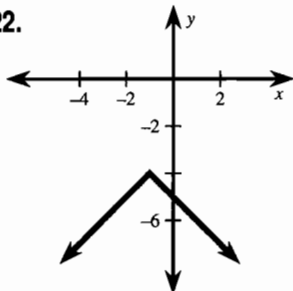
20.



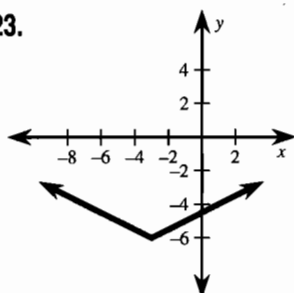
21.



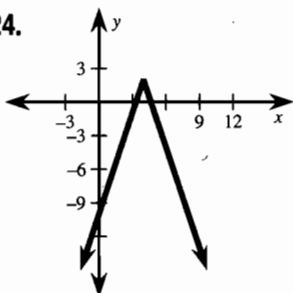
22.



23.



24.



25. a

26. $y = -|x - 2| + 2$, $y = |x - 6| - 2$, $y = -|x - 10| + 2$

27. 3 ft 28. Yes

Lesson 4.8

1. $x = 1$, $x = -5$ 2. $x = 5$, $x = 3$
3. $x = -1$, $x = 13$ 4. $x = 2$, $x = -4$
5. $x = -\frac{1}{4}$, $x = -\frac{5}{4}$ 6. $x = 14$, $x = 0$
7. $x = \frac{4}{3}$, $x = 0$ 8. $x = 20$, $x = -26$
9. $x = 4$, $x = -\frac{16}{3}$ 10. $x = 4$, $x = -6$
11. $x = 7$, $x = 1$ 12. $x = 14$, $x = -10$
13. $x = 12$, $x = 2$ 14. $x = 4$, $x = -10$
15. $x = 6$, $x = -3$ 16. $x = 1$, $x = -3$
17. $x = 11$, $x = -5$ 18. $x = 9$, $x = 7$
19. $x = \frac{1}{3}$, $x = -1$ 20. $x = 2$, $x = -\frac{6}{5}$
21. $x = 6$, $x = 4$ 22. $x = -1$, $x = -5$
23. $x = 2$, $x = -1$ 24. $x = 4$, $x = -6$
25. 30 ft 26. 100 ft 27. 6 ft 28. 3 ft
29. 2.5 oz, 3.5 oz, $|x - 3| = 0.5$

Lesson 5.1

1. $y = 2x + 3$ 2. $y = 5x$ 3. $y = 4x - 3$
4. $y = -5x + 1$ 5. $y = -3x - 2$
6. $y = -6x - \frac{3}{5}$ 7. $y = \frac{1}{2}x - 8$
8. $y = -\frac{3}{4}x + 9$ 9. $y = \frac{1}{5}x + 3$
10. $y = -\frac{4}{5}x - 7$ 11. $y = \frac{1}{3}x + \frac{2}{3}$
12. $y = -\frac{4}{3}x + \frac{7}{8}$ 13. $y = x + 2$
14. $y = -x + 3$ 15. $y = 4x + 3$
16. $y = -3x + 5$ 17. $y = \frac{1}{3}x - 1$
18. $y = -\frac{1}{2}x - 2$ 19. $y = 0.005x$
20. $\frac{3}{4}$, 7.5, 60, 1000
21. $y = 12x + 50$ 22. \$50, \$62, \$74, \$86, \$98

Lesson 5.2

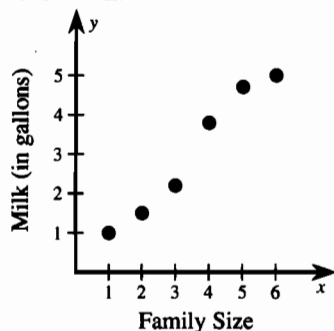
1. $y = 3x - 2$ 2. $y = -x + 8$
3. $y = 4x + 14$ 4. $y = -3x + 19$
5. $y = -\frac{1}{3}x - 5$ 6. $y = -\frac{1}{2}x - 1$
7. $y = 6x + 8$ 8. $y = 5x + 9$
9. $y = -\frac{1}{2}x - 7$ 10. $y = 8$
11. $y = 4x + 12$ 12. $y = \frac{1}{3}x - 7$
13. $y = 2x + 1$ 14. $y = -3x + 2$
15. $y = -2x - 3$ 16. $y = \frac{1}{2}x - 5$
17. $y = -5x - 1$ 18. $y = \frac{1}{4}x - 6$
19. $y = 20t + 210$ 20. $y = 2x + 18$
21. $y = 0.05x + 15$ 22. $y = 15t + 55$

Lesson 5.3

1. $y = 2x - 1$ 2. $y = -3x + 14$
3. $y = -\frac{1}{3}x - 1$ 4. $y = x + 4$
5. $y = 2x + 4$ 6. $y = -4x - 3$
7. $y = -3x - 6$ 8. $y = 3x + 16$
9. $y = 5x + 31$ 10. $y = -x + 1$
11. $y = \frac{1}{8}x + 6$ 12. $y = -2x - 15$
13. $y = 2x - 1$ 14. $y = -\frac{1}{3}x + 2$
15. $y = -3x - 4$ 16. $y = 4x - 3$
17. $y = \frac{1}{4}x - 2$ 18. $y = -\frac{3}{2}x + 3$
19. $y = 4x$ 20. $y = \frac{18}{7}t + 51$
21. $y = -\frac{1}{3}x + \frac{8}{3}$
22. $y = \frac{11}{13}x + 50$, $m = \frac{11}{13}$

Lesson 5.4

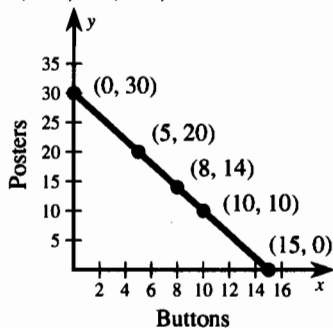
1. Yes 2. No 3. Yes 4. $y = x$
5. $y = x - 4$ 6. $y = -x + 2$
7. $y = 2x + 2$ 8. $y = -3x - 1$
9. $y = -\frac{1}{2}x - 3$ 10. $y = 180 - 2x$, 160 lb
11. x represents family size, y represents gallons of milk



$$y = \frac{4}{5}x + \frac{1}{5}, 5.8 \text{ gal}$$

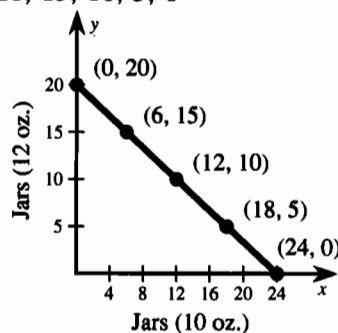
Lesson 5.5

1. $2x - y = 8$ 2. $6x - 4y = -7$
3. $-3x + y = 2$ 4. $3x + y = 5$
5. $11x + y = -4$ 6. $2x - 3y = 5$
7. $-x + 4y = 8$ 8. $x + 3y = -24$
9. $2x + 3y = 12$ 10. $-x + 5y = -3$
11. $-3x + 10y = -40$ 12. $6x + 10y = 90$
13. $-2x + y = -5$ 14. $4x + y = 9$
15. $-3x + y = 6$
16. $6x + y = -8$ 17. $-x + 3y = -30$
18. $x + 2y = 6$ 19. $-3x + y = -7$
20. $3x + y = -1$ 21. $x + 8y = 17$
22. $-5x + y = 15$ 23. $-x + 2y = -6$
24. $x + 3y = 12$ 25. $2x + y = 30$
26. 30, 20, 14, 10, 0



$$27. 10x + 12y = 240$$

$$28. 20, 15, 10, 5, 0$$

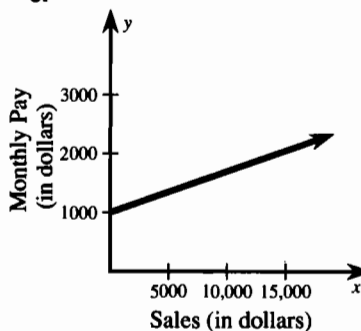


Lesson 5.6

1. $y = 3x - 1$ 2. $y = -2x + 7$
3. $y = -\frac{1}{2}x$ 4. $y = -5x - 10$
5. $y = \frac{1}{4}x + 4$ 6. $y = -2x - 11$
7. $y = x - 5$ 8. $y = \frac{1}{3}x - 1$
9. $y = -\frac{1}{7}x + 6$ 10. $y = \frac{1}{8}x + \frac{7}{2}$
11. $y = -\frac{1}{6}x - \frac{3}{2}$ 12. $y = \frac{2}{3}x + \frac{5}{3}$
13. $y = 2x + 3$ 14. $y = -3x - 1$
15. $y = \frac{1}{3}x + 1$ 16. $y = -\frac{1}{2}x + 2$
17. $y = \frac{3}{2}x - 2$ 18. $y = -\frac{2}{5}x - 3$
19. $y = 0.75x$ 20. $y = -\frac{1}{2}x + 4$
21. $y = -\frac{1}{2}x + 1250$ 22. $y = 2x + 10$

Lesson 5.7

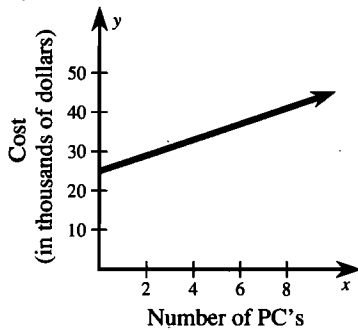
1. $y = 0.07x + 1000$ 2. \$1980
- 3.



4. 0.07, commission rate
5. 1000, base pay 6. \$7000
7. $y = 2000x + 25,000$ 8. \$35,000

Lesson 5.7 (continued)

9.



10. 2000, cost of an additional PC per department

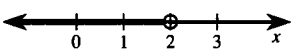
11. 25,000, base cost of SPC program 12. 7

13. $5x + 4y = 5280$ 14. 70 15. 520

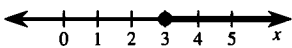
16. $y = -\frac{5}{4}x + 1320$ 17. $-\frac{5}{4}$ 18. 1320

Lesson 6.1

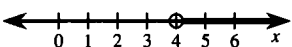
1.



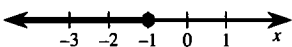
2.



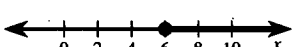
3.



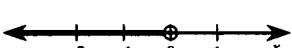
4.



5.



6.



7. $x < 3$

8. $x \leq -2$ 9. $x \leq 11$ 10. $x < -2$

11. $x > -4$ 12. $x \geq -9$ 13. $x > 5$

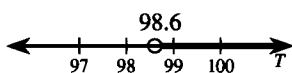
14. $x \geq -4$ 15. $x \leq 3$ 16. $x < 7$

17. $x > -5$ 18. $x > \frac{2}{3}$ 19. $x \leq -\frac{1}{2}$

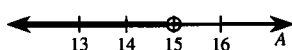
20. $x > 1$ 21. $x \leq 2$ 22. $x < -9$

23. $x \leq 1$ 24. $x < -\frac{1}{2}$

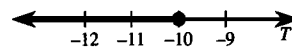
25. $T > 98.6$



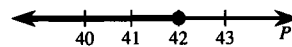
26. $A < 15$



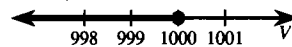
27. $T \leq -10$



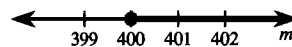
28. $p \leq 42$



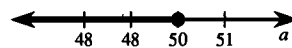
29. $V \leq 1000$



30. $m \geq 400$



31. $a \leq 50$



Lesson 6.2

1. $S < 160,000$ 2. $h \geq 42$ 3. $g < 94$

4. $x > 71$ 5. $r \geq 11$ 6. $x > 4$

7. 2 8. 334 or fewer 9. 1982 10. 1984

Lesson 6.3

1. $-2 < x < 2$ 2. $2 \leq x < 5$

3. $7 \leq x \leq 8$ 4. $1 < x < 3$

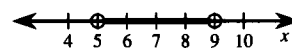
5. $1 < x \leq 3$ 6. $-5 < x \leq 5$

7. $-6 < x \leq -3$ 8. $4 \leq x \leq 7$

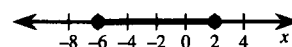
9. $-4 < x \leq \frac{1}{2}$ 10. $x \leq 3$ or $x \geq 4$

11. $x < -3$ or $x > -1$ 12. $x < \frac{1}{2}$ or $x \geq 6$

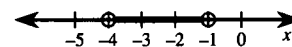
13. $5 < x < 9$



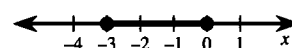
14. $-6 \leq x \leq 2$



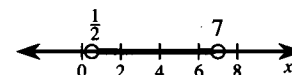
15. $-4 < x < -1$



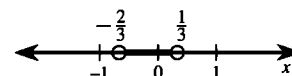
16. $-3 \leq x \leq 0$



17. $\frac{1}{2} < x < 7$

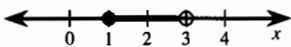


18. $-\frac{2}{3} < x < \frac{1}{3}$

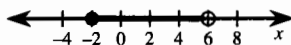


Lesson 6.3 (continued)

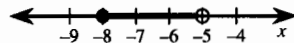
19. $1 \leq x < 3$



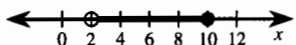
20. $-2 \leq x < 6$



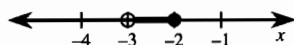
21. $-8 \leq x < -5$



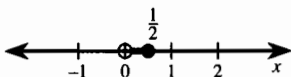
22. $2 < x \leq 10$



23. $-3 < x \leq -2$



24. $0 < x \leq \frac{1}{2}$



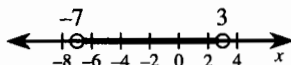
25. $45 \leq x \leq 55$

26. $50 \leq x \leq 70$, $40 \leq y \leq 60$

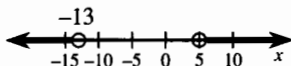
27. $15 < x < 20$ 28. $3 \leq x \leq 7$, $5 \leq d \leq 9$

Lesson 6.4

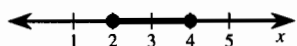
1. $-7 < x < 3$



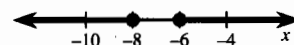
2. $x < -13$ or $x > 5$



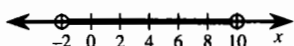
3. $2 \leq x \leq 4$



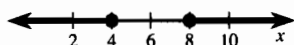
4. $x \leq -8$ or $x \geq -6$



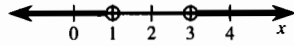
5. $-2 < x < 10$



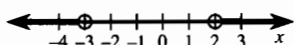
6. $x \leq 4$ or $x \geq 8$



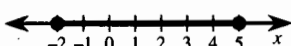
7. $x < 1$ or $x > 3$



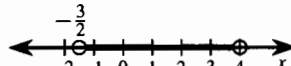
8. $x < -3$ or $x > 2$



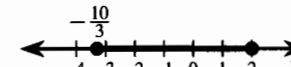
9. $-2 \leq x \leq 5$



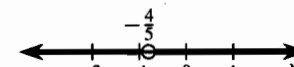
10. $-\frac{3}{2} < x < 4$



11. $-\frac{10}{3} \leq x \leq 2$



12. $x > -\frac{4}{5}$ or $x < -\frac{4}{5}$



13. $|x| \leq 3$

14. $|x-2| \leq 4$

15. $|x+3| < 2$

16. $|x-7| < 1$

17. $|x+1| \leq 4$

18. $|x+3| < 3$

19. $|x| \geq 2$

20. $|x| > 6$

21. $|x| \leq 17$

22. $|x-3.26| \leq 0.25$, $3.01 \leq x \leq 3.51$

23. $|x-1.2| \leq 0.002$, $1.198 \leq x \leq 1.2002$

24. $|x-100| > 0.01$, $x < 99.99$ or $x > 100.01$

Lesson 6.5

1. No, no

2. No, yes

3. No, no

4. Yes, no

5. Yes, yes

6. Yes, yes

7. Yes, no

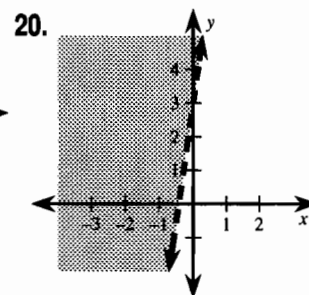
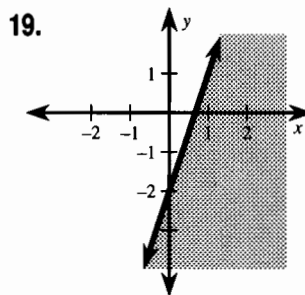
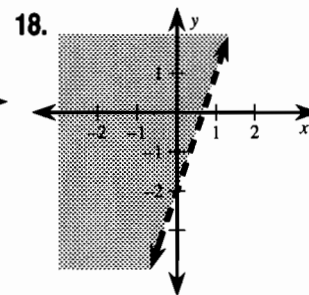
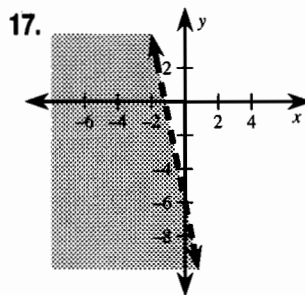
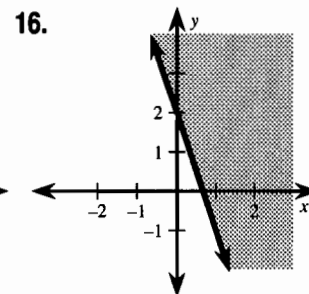
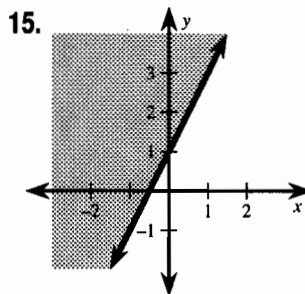
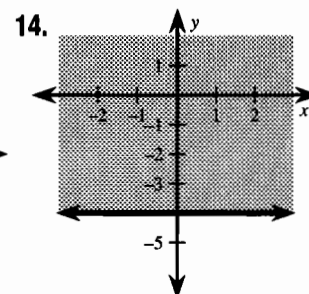
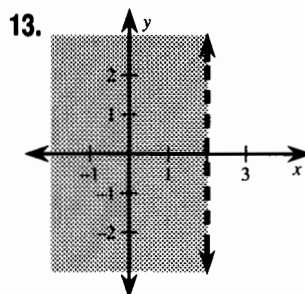
8. No, no

9. Yes, no

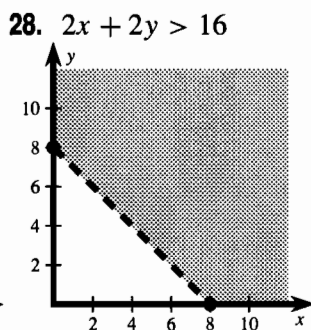
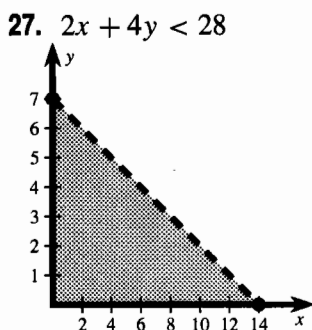
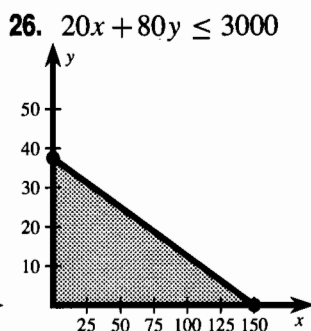
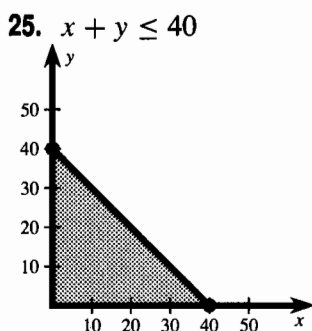
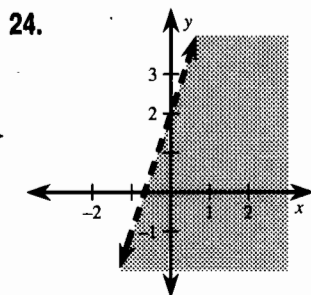
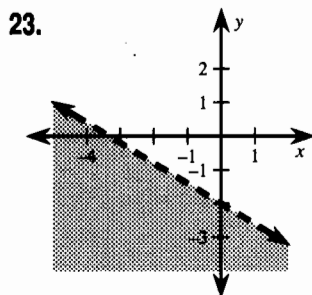
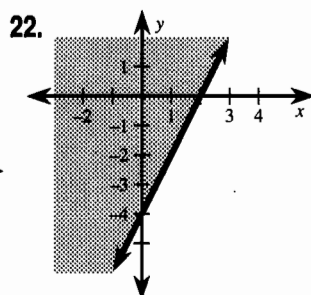
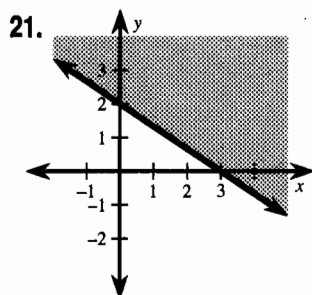
10. Yes, yes

11. No, yes

12. No, yes



Lesson 6.5 (continued)

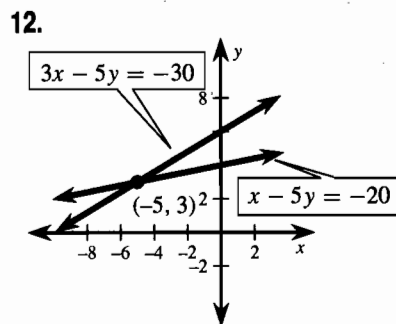
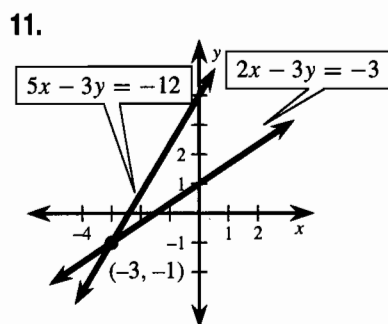
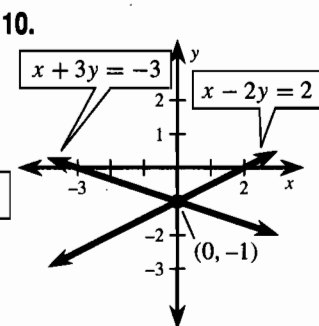
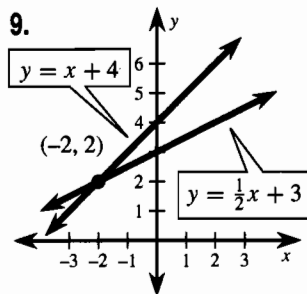
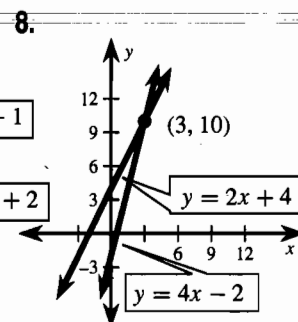
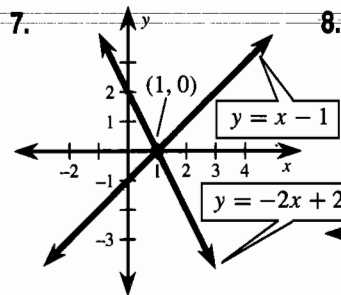


Lesson 6.6

1. He was born.
2. Class treasurer
3. 3
4. Puppy
5. Pierre's
6. Burger Stop and Don's Subs
7. \$5,036,200,000
8. \$13,559,000,000
9. 15,108,600,000
10. \$500
11. \$580
12. \$20

Lesson 7.1

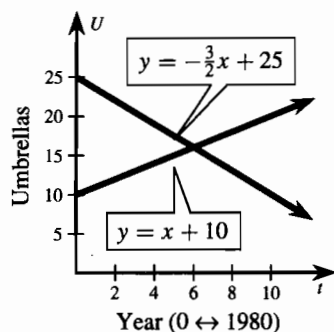
1. Yes, no
2. No, yes
3. No, yes
4. Yes, no
5. Yes, no
6. Yes, no



13. Bottles of regular pop = x (bottles)
Bottles of diet pop = y (bottles)
Total number of bottles = 12 (bottles)
 $x = 6, y = 6$
14. Infield outs = x (outs)
Outfield outs = y (outs)
Total outs = 27 (outs)
Number of fly ball outs = 18
 $x = 18, y = 9$

Lesson 7.1 (continued)

15. 1986



Lesson 7.2

1. (2, 4) 2. (-1, -2) 3. (-5, 7)
4. (1, 5) 5. (2, -3) 6. (0, -1)
7. (3, -6) 8. (-2, -6) 9. (1, -3)
10. (3, 0) 11. (0, 0) 12. (1, -1)
13. (4, -2) 14. (2, 1) 15. (-3, 2)
16. (2, 3) 17. (-1, 4) 18. (6, -1)
19. 4 households mowed,
6 households shoveled
20. Mother drove 4 hr, father drove 6 hr
21. $x = 12$, $y = 4$ 22. 6 in., 5 in., 5 in.
23. 3 cm, 11 cm

Lesson 7.3

1. (6, -1) 2. (14, 3) 3. (2, -3)
4. (-2, -1) 5. (1, 3) 6. (-2, 4)
7. (5, -2) 8. (-3, 6) 9. (3, 1)
10. (-4, 2) 11. (-5, -5) 12. (8, 3)
13. (7, -2) 14. (-1, 5) 15. (-1, -4)
16. (-6, 0) 17. (-1, -2) 18. (0, 4)
19. 50 milliliters of each
20. 6 tons of 20% mixture, 4 tons of 70% mixture
21. Kicker's distance (no wind) = 40 yards
Wind's distance = 10 yards
22. (20, 10)

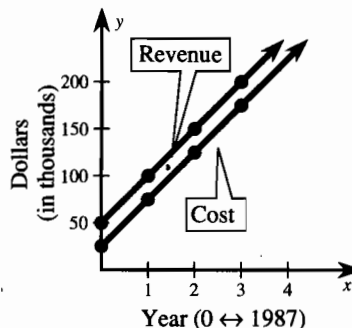
Lesson 7.4

1. 9 right-handed, 3 left-handed
2. 5 packages of hotdogs,
3 packages of hamburger
3. Steak: 5 people, chicken: 1 person
4. $w = 4$ in., $l = 6$ in.
5. To the PA-Ohio border: 3 hr
Border to grandparents' house: 2 hr
6. June, 45%
7. $-0.3x + y = 100$
 $-0.1x + y = 200$
8. 500 miles 9. Company A 10. Company B

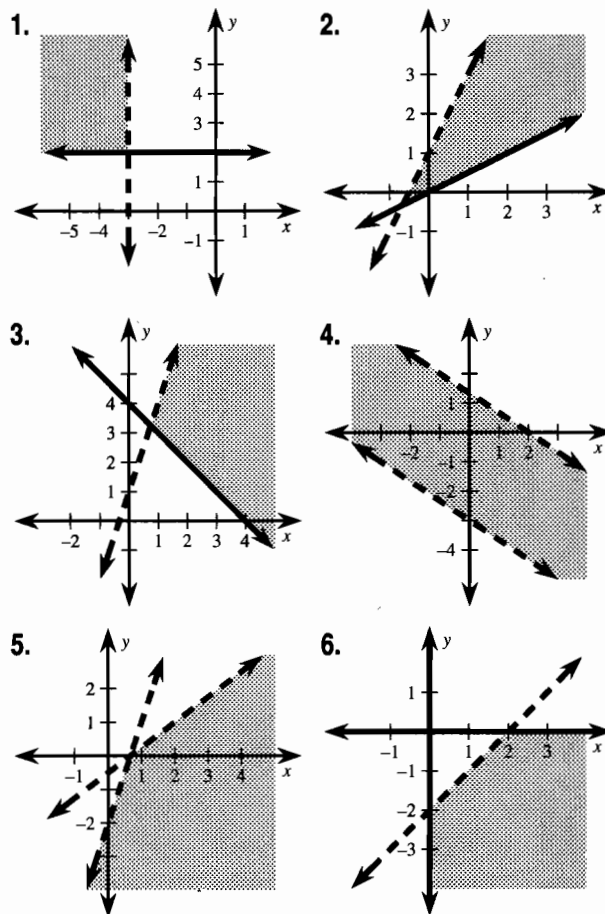
Lesson 7.5

1. No solution 2. No solution
3. Many solutions 4. No solution
5. Many solutions 6. No solution
7. No solution 8. No solution
9. Many solutions 10. Many solutions
11. No solution 12. No solution
13. $\begin{cases} x - 2y = -6 \\ x - 2y = 2 \end{cases}$ 14. $\begin{cases} 2x + y = 2 \\ 4x + 2y = 4 \end{cases}$
15. $\begin{cases} x + y = 5 \\ x + y = 1 \end{cases}$
16. No, they are the same equation.
17. $\begin{cases} -50x + y = 50 \\ -50x + y = 25 \end{cases}$

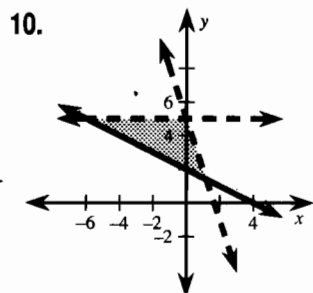
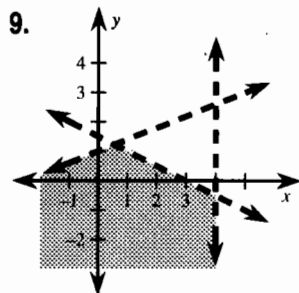
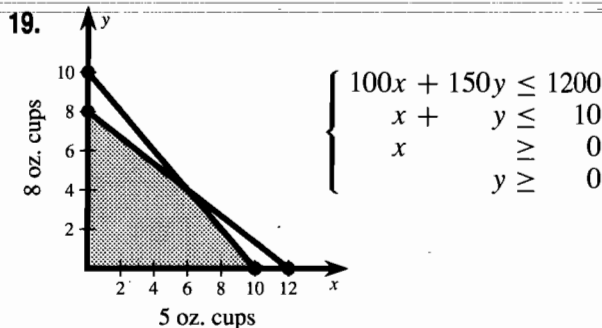
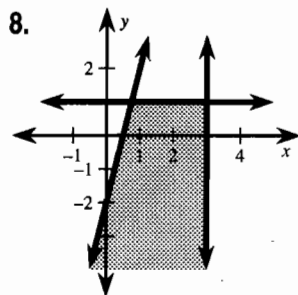
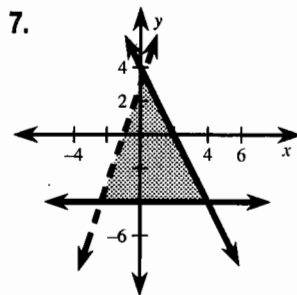
The profit was constant.



Lesson 7.6



Lesson 7.6 (continued)



20.
$$\begin{cases} y \geq -\frac{1}{3}x + 4 \\ y \leq 4 \\ x \leq 6 \end{cases}$$

21.
$$\begin{cases} y \leq -\frac{1}{3}x + 4 \\ y \geq \frac{1}{3}x \\ x \geq 0 \end{cases}$$

22.
$$\begin{cases} y \leq \frac{1}{3}x \\ y \geq 0 \\ x \leq 6 \end{cases}$$

Lesson 7.7

- min = 0, max = 15
- min = 0, max = 48
- min = 10, max = 40
- min = 9, max = 17
- min = 6, max = 17
- min = 0, max = 12
- min = 5, max = 26
- min = 12, max = 26
- min = 3, max = 30
- min = 1, max = 28
- 10 dozen roses and 50 dozen carnations
- 8 lake-front homes, 10 regular homes

Lesson 8.1

- 3^6 or 729
- 2^{15} or 32,768
- x^8
- y^{16}
- $8x^3$
- $9x^8$
- x^{14}
- $8x^5$
- $x^3y^3z^{12}$
- $a^8b^{10}c^{15}$
- $-x^5y^{10}z^{10}$
- $4x^8y^{13}$
- x^6 , 64
- x^3y^6 , 8
- $3x^3y$, 24
- x^4y^7 , 16
- $-8x^3y^3$, -64
- $72x^2y^2$, 288
- $5x^2y^7$, 20
- $144y^8$, 144
- $-432x^3y^6$, -3456
- x^6y^{20} , 64
- x^4y^5 , 16
- $-2x^{11}y^7$, -4096
- 256 ft^3
- $8\pi \text{ ft}^3$
- \$108.16
- 1,048,576, no
- $(5x)^2$, 1600 mi^2

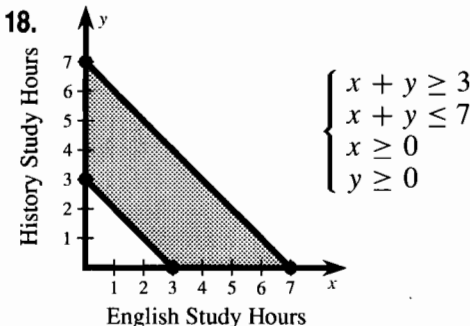
Lesson 8.2

- $\frac{1}{27}$
- $\frac{1}{32}$
- 16
- $\frac{1}{8}$
- 3
- 25
- 1
- $\frac{1}{16}$
- 8
- $\frac{1}{64}$
- $\frac{1}{36}$
- $-\frac{1}{8}$
- $\frac{1}{x^8}$
- $\frac{3}{x^5}$
- $\frac{x^2}{7}$
- $9x^4$
- $\frac{8}{x^7y^8}$
- $\frac{x^4y^3}{6z^5}$
- $3y^3$
- $\frac{1}{16x^2}$
- $\frac{1}{16x^4}$
- $27x^3$
- $\frac{1}{y^2}$
- $\frac{3y^5}{4x^2}$

- (0, 3), (5, -2), (2, 7)
- (0, -1), (5, 3), (1, 4), (0, 4)
- (-6, 4), (1, 4), (3, 0), (3, -2)

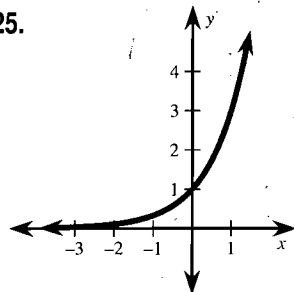
16.
$$\begin{cases} x \geq -1 \\ x \leq 3 \\ y \geq -1 \\ y \leq 5 \end{cases}$$

17.
$$\begin{cases} y \leq -\frac{1}{2}x + 3 \\ y \geq \frac{1}{3}x - \frac{1}{3} \\ x \geq -2 \end{cases}$$

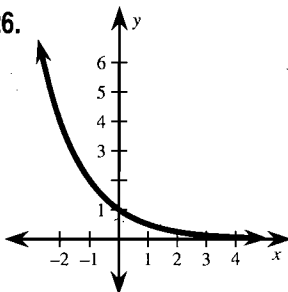


Lesson 8.2 (continued)

25.



26.



27. 100, 50, 25, 12.5, 6.25, 3.125, 1.5625

28. 1980: ≈ 1206 , 1985: 1200
1990: ≈ 1194 , 2000: ≈ 1182

29. 10,240 grams

30. 1960: ≈ 1869 , 1970: ≈ 1933
1980: 2000, 1990: ≈ 2069

Lesson 8.3

1. 49 2. $\frac{1}{36}$ 3. 1 4. -1
5. 128 6. 16 7. $\frac{1}{27}$ 8. $\frac{8}{27}$
9. $\frac{16}{25}$ 10. $-\frac{1}{32}$ 11. $\frac{3}{11}$ 12. $\frac{4}{9}$
13. $\frac{x^4}{81}$ 14. x^5 15. $\frac{64}{x^6}$
16. $\frac{1}{x^3}$ 17. x^9 18. $4x^3y$
19. $\frac{9y^4}{4x^7}$ 20. $-\frac{4y^3}{x^3}$ 21. $\frac{y^4}{x^2}$
22. $\frac{x^3}{3}$ 23. $\frac{54y^6}{x^{14}}$ 24. $-\frac{5y^6}{8x^8}$
25. $\frac{3125}{7776}$ 26. 1.030301
27. 2, 2.4, 2.88, 3.456
28. 100, ≈ 51 , ≈ 26 , ≈ 13 , ≈ 7 , ≈ 4 , ≈ 2

Lesson 8.4

1. 2030 2. 34,578 3. 64.3 4. 720,000
5. 5.2 6. 0.0468 7. 0.0000013
8. 0.008497 9. 0.00098 10. 2.5×10^4
11. 3.641×10^1 12. 4×10^6
13. 5.642×10^5 14. 9.32×10^0
15. 1.5×10^{-1} 16. 8.3×10^{-3}
17. 7.18×10^{-7} 18. 6.73×10^{-2}
19. 6×10^{11} 20. 9×10^{-9}
21. 6×10^2 22. 8×10^{-1}
23. 1.2×10^{10} 24. 3.5×10^{-3}
25. 2.4×10^4 26. 3.6×10^{-2}
27. 4.2×10^{-1} 28. 2.7×10^9
29. 3.125×10^{-4} 30. 1×10^{12}
31. 1.86×10^5 32. 1.2719×10^9
33. 6.681822×10^{-24} 34. $\approx 2.91 \times 10^{-1}$

Lesson 8.5

1. ≈ 8424 people/km² 2. \$4000
3. 1.0375×10^3 minutes 4. $\frac{1}{15}$

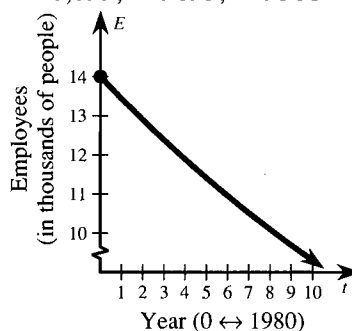
5. $\approx 4.684 \times 10^3$ sec 6. 65
7. 3×10^4 ft², ≈ 0.37 dollars/ft²
8. $\approx 3.26 \times 10^{-15}$ cm³

Lesson 8.6

1. \$325.78 2. \$1191.02 3. a
4. a 5. $P = 100,000(1.015)^t$
6. $T = 4000(1.08)^t$
7. $y = 300 + 30t$, $y = 300(1.062)^t$, yes
8. $y = 500 + 35t$, $y = 500(1.062)^t$, no

Lesson 8.7

1. \$11,250.00, \$1,126.27 2. ≈ 50
3. 14,000, $\approx 13,440$, $\approx 12,902$, $\approx 12,386$,
 $\approx 11,891$, $\approx 11,415$, $\approx 10,959$, $\approx 10,520$,
 $\approx 10,099$, ≈ 9695 , ≈ 9308



4. $\approx 7.0\%$ 5. ≈ 5.9 hr, $s = 8(0.985)^t$
6. $S = 600(0.9)^t$, \$600, \$540, \$486, \$437.40,
\$393.66, \$354.29, \$318.86, \$286.98
7. $\approx 327,291$ 8. $\approx \$1.33$ million

Lesson 9.1

1. 4 2. -8 3. $\frac{1}{7}$ 4. 0.5
5. ≈ 5.66 6. -6 7. $\frac{2}{5}$ 8. 12
9. ≈ -10.39 10. $-\frac{6}{11}$ 11. -1.3
12. $\frac{17}{14}$ 13. 7 14. ≈ 3.46 15. 5
16. Undefined 17. ≈ 4.12 18. 9
19. ≈ 1.89 ; ≈ 0.51 20. ≈ 2.52 ; ≈ -1.02
21. ≈ -0.51 ; ≈ -2.82 22. ≈ 5.10 ; ≈ -0.10
23. ≈ -6.12 ; ≈ -1.88 24. ≈ 0.67 ; ≈ -1.24
25. 3.5 cm 26. ≈ 10.05 ft 27. ≈ 65.80 mi
28. ≈ 17.09 ft

Lesson 9.2

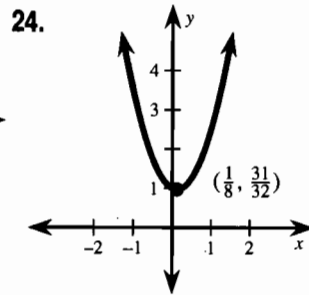
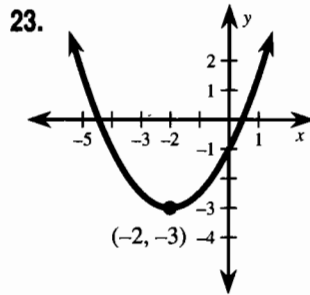
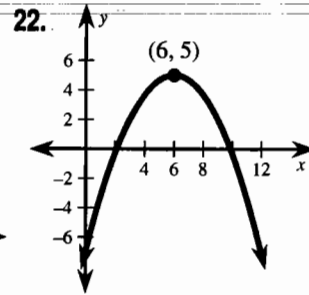
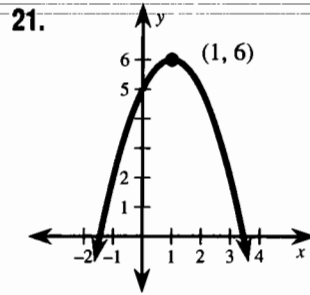
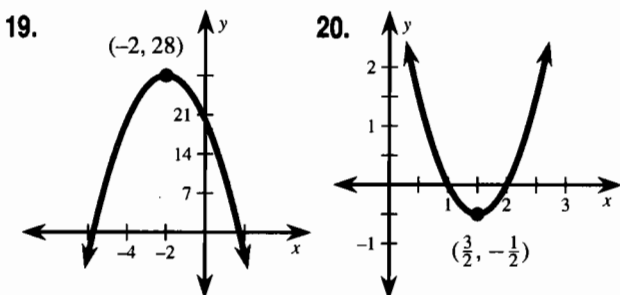
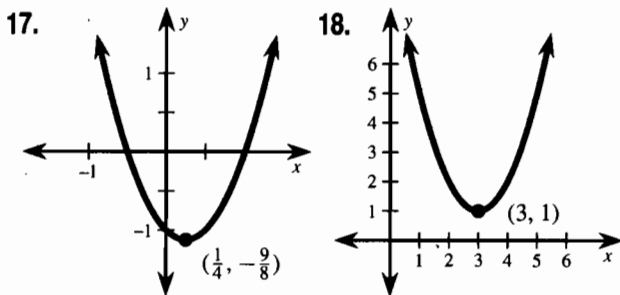
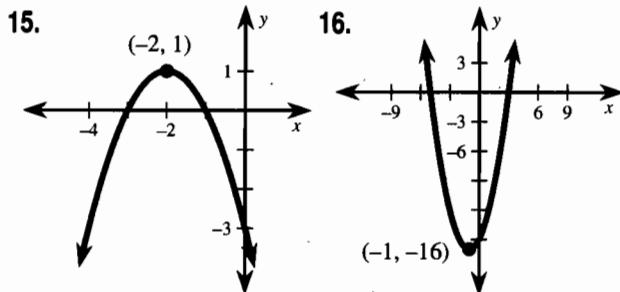
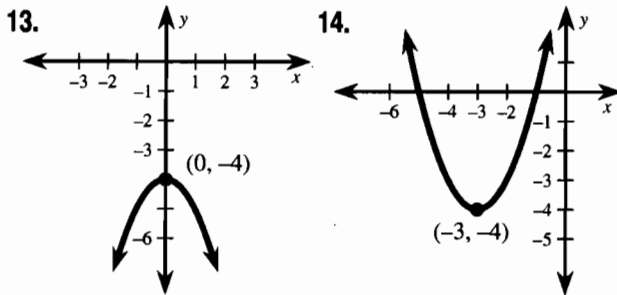
1. ± 7 2. ± 8 3. ± 10 4. ± 4
5. ± 3 6. ± 6 7. $\pm \frac{2}{5}$ 8. ± 1
9. ± 9 10. ± 3 11. ± 10 12. $\pm \frac{11}{2}$
13. ± 5.92 14. ± 3.46 15. ± 2.24
16. ± 5.10 17. ± 4.12 18. ± 2.65

Lesson 9.2 (continued)

19. ± 3.32 20. ± 7.53 21. ± 1.66
 22. ± 2.45 23. ± 6.04 24. ± 10.95
 25. ≈ 2.36 in. 26. 18 ft 27. ≈ 4.33
 28. ≈ 7.84 29. 5 ft 30. 4

Lesson 9.3

1. up, (0, 0) 2. down, (0, 0)
 3. up, (0, -1) 4. up, (-3, -9)
 5. down, (0, 8) 6. down, (-2, 8)
 7. up, (-3, -7) 8. up, (1, 1)
 9. up, (2, -14) 10. down, (1, 1)
 11. up, (-1, 3) 12. down, (2, 1)



25. 630 ft 26. 1010 ft 27. 5 ft 28. ≈ 10.3 ft
 29. ≈ 3.89 ft 30. ≈ 13.00 ft

Lesson 9.4

1. 5, 3 2. -2, -9 3. -2, $\frac{1}{2}$ 4. $1, \frac{3}{4}$
 5. 0.5, -3.75 6. $\approx 1.19, \approx -4.19$
 7. $\approx 6.85, \approx 0.15$ 8. $\approx -0.28, \approx -2.39$
 9. $\approx -1.59, \approx 1.26$
 10. $\approx 3.61, \approx -1.11$ 11. $\approx 1.34, \approx -0.74$
 12. $\approx 2.55, \approx 0.45$ 13. 2, -4 14. -0.5, 3
 15. $\frac{3}{2}, -\frac{4}{3}$ 16. None
 17. $\approx -0.23, \approx -1.43$
 18. $\approx -9.98, \approx -0.02$
 19. $\approx 9.16, \approx -0.16$
 20. $\approx 0.17, \approx -2.92$ 21. None
 22. $\approx -0.38, \approx -2.62$ 23. $\approx 1.26, \approx 0.45$
 24. $\approx 3.05, \approx -3.72$ 25. 4 in.
 26. ≈ 1.97 sec 27. ≈ 0.87 28. ≈ 1.45
 29. 1.27

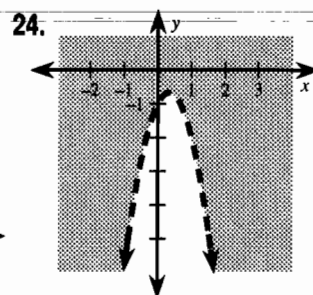
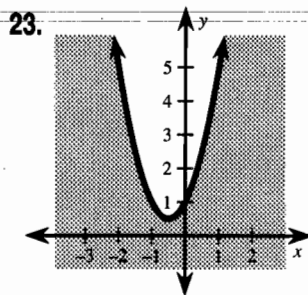
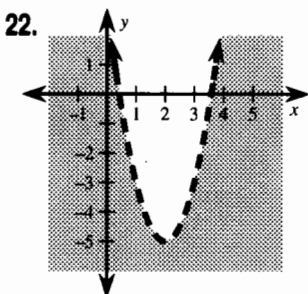
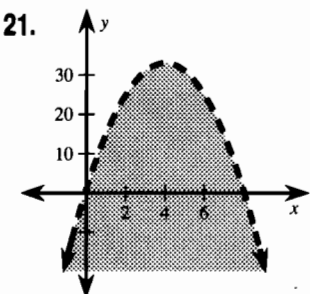
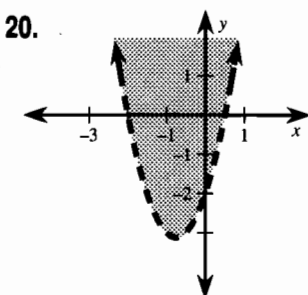
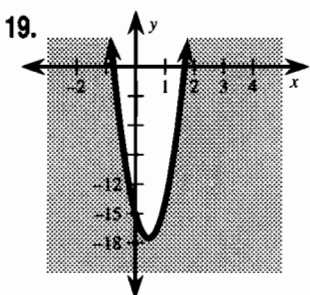
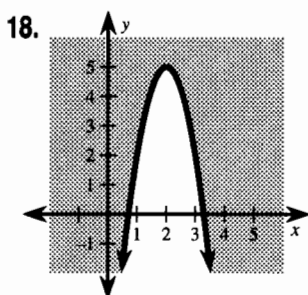
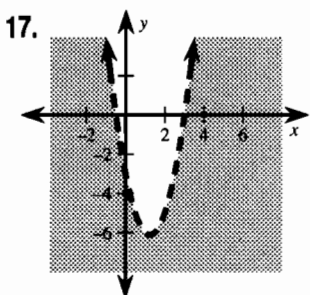
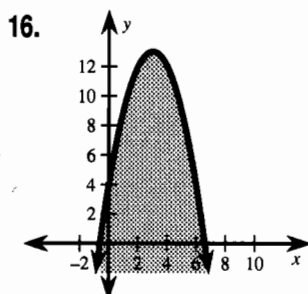
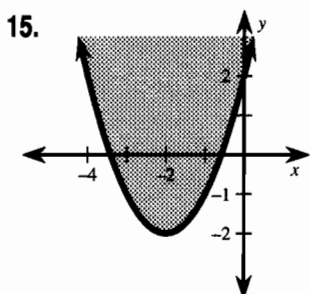
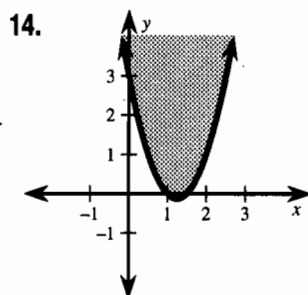
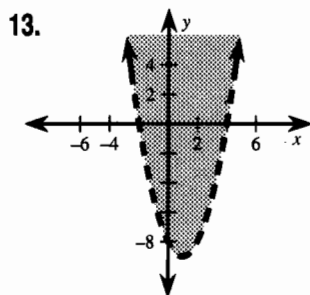
Lesson 9.5

1. 1 2. 2 3. 2 4. None
 5. 2 6. 2 7. None 8. 1
 9. 1 10. 2 11. 2 12. None
 13. No 14. Yes 15. 1995 16. 2000
 17. No 18. Yes

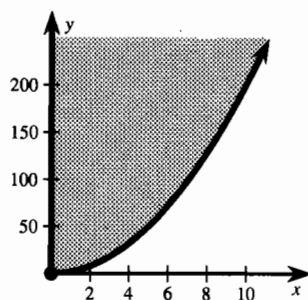
Lesson 9.6

1. No 2. No 3. Yes 4. Yes
 5. Yes 6. No 7. Yes 8. No
 9. Yes 10. No 11. Yes 12. Yes

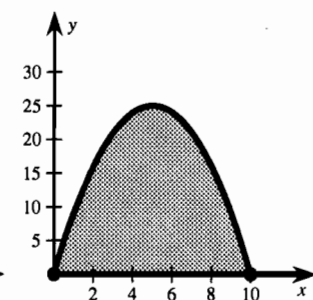
Lesson 9.6 (continued)



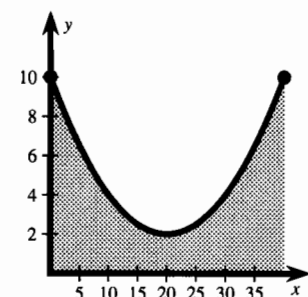
25. No, yes



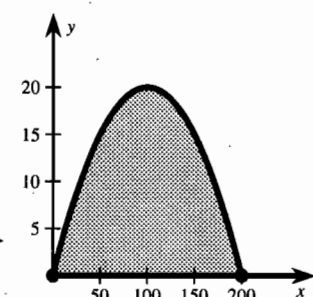
26. Yes



27. 10 cm

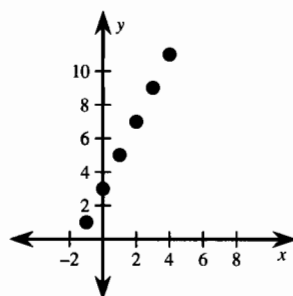


28. Between 0 and 20 meters

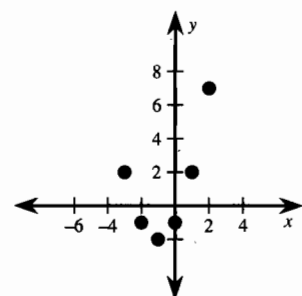


Lesson 9.7

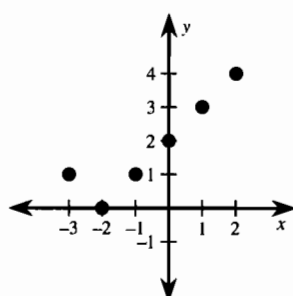
1. Linear



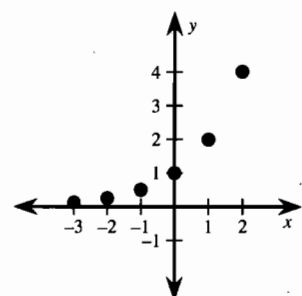
2. Quadratic



3. Absolute value

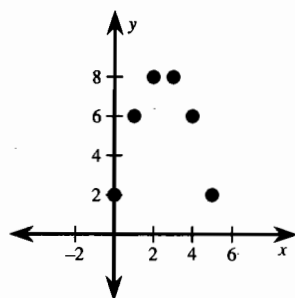


4. Exponential

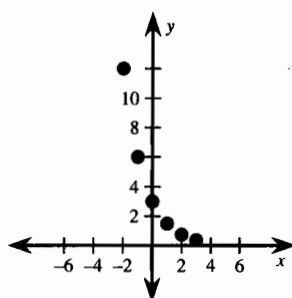


Lesson 9.7 (continued)

5. Quadratic



6. Exponential



7. $A = 6s^2$ 8. $B = 100 + 5t$ 9. $E = 5v^2$
 10. $R = 8(1.25)^t$ 11. $V = 500 - 50t$
 12. $P = 10(0.9)^t$

Lesson 10.1

1. Constant, monomial 2. Linear, binomial
 3. Quadratic, trinomial 4. Cubic, binomial
 5. Quartic, binomial 6. Quartic, polynomial

7. $2x^2 - 3x - 8$ 8. $4x^3 + 3x - 1$
 9. $-x^3 - 2x^2 - 3x + 2$ 10. $10x^2 - 3x - 4$
 11. $3x^3 + 3x^2 + x - 3$ 12. $x^5 + 5x^3 + x - 4$
 13. $-4x^2 + 6x + 5$ 14. $-4x^3 - 14x^2 + 3x + 13$
 15. $x^3 - 7$ 16. $10x^2 + 3x + 7$
 17. $2x^3 + x^2 - 3x + 4$ 18. $x^3 + 3x^2 - 7x - 3$
 19. $5x^2 - 7x - 1$ 20. $-4x^3 - 7x^2 + 6x - 13$
 21. $-18x^2 - 2x - 5$ 22. $-2x^3 + x - 8$
 23. $3x^2 - 12\pi x + 8\pi$ 24. $\frac{9}{4}x^2 + 6x - 30$
 25. $\frac{4}{15}t^2 + \frac{7}{3}t + 100$ 26. $0.014t^2 + 0.15t + 10$

Lesson 10.2

1. $6x^3 - 15x^2 + 3x$ 2. $-4x^3 + 7x^2$
 3. $2x^5 - 4x^4 + 16x^3 - 10x^2$ 4. $-18x^5 + 6x^3$
 5. $18x^2 - 15x^3 + 24x$
 6. $-10x^5 - 15x^4 + 35x^3 - 45x^2$
 7. $x^2 - 3x - 28$ 8. $x^2 - x - 30$
 9. $x^2 - 12x + 32$ 10. $3x^2 + 17x + 10$
 11. $8x^2 + 5x - 3$ 12. $5x^2 - 32x + 12$
 13. $x^3 + 4x^2 - 3x - 12$ 14. $x^3 + 9x^2 + 20x$
 15. $2x^2 + \frac{29}{2}x + 15$ 16. $\frac{1}{6}x^2 + x - 12$
 17. $2x^2 - \frac{4}{3}x + \frac{1}{6}$ 18. $6x^2 + 19x + 10$
 19. $12x^2 - 20x + 7$ 20. $40x^2 + x - 6$
 21. $12x^2 - 23x - 9$ 22. $6x^3 + 2x^2 + 12x + 4$
 23. $30x^3 + 25x^2 - 12x - 10$
 24. $32x^3 - 8x^2 + 12x - 3$
 25. $20x^3 + 3x^2 - 9x$ 26. $14x^3 - 40x^2 - 6x$
 27. $3x^3 + 11x^2 - 27x - 35$
 28. $2x^4 + 3x^3 - x^2 - 9x - 15$
 29. $2x^3 + 3x^2 - 11x + 3$ 30. $12x^3 - 10x^2 + 8$
 31. $6x^2 + 9x - 2$; 2578 ft²

32. $18x^2 + 30x + 12$; 144 in.³

33. Distance = $\frac{1}{75}x^2 + \frac{1}{2}x + \frac{7}{6}$

34. Total Cost = $0.25t^3 + 75.5t^2 + 160t + 3000$

Lesson 10.3

1. $x^2 + 10x + 25$ 2. $x^2 - 12x + 36$
 3. $x^2 + 18x + 81$ 4. $4x^2 + 4x + 1$
 5. $16x^2 - 8x + 1$ 6. $x^2 + 14x + 49$
 7. $x^2 - 4x + 4$ 8. $9x^2 - 24x + 16$
 9. $9x^2 + 48x + 64$ 10. $x^2 - 6x + 9$
 11. $25x^2 - 20x + 4$ 12. $16x^2 + 40x + 25$
 13. $x^2 - 9$ 14. $x^2 - 49$ 15. $4x^2 - 1$
 16. $16x^2 - 9$ 17. $9x^2 - 9$ 18. $25x^2 - 4$
 19. $4x^2 - 9$ 20. $49x^2 - 25$ 21. $x^2 - y^2$
 22. $25x^2 - y^2$ 23. $x^2 - 16y^2$ 24. $4x^2 - 9y^2$
 25. $8x$, 40 in.², 48 in.², 56 in.²
 26. $4x + 16$, 36 in.², 44 in.², 52 in.²
 27. $T = 4t^2 - 9$, \$91,000
 28. Brown: 75%, Blue: 25%

Lesson 10.4

1. $3(x^2 + 6)$ 2. $6(x - 2)$ 3. $5(x^2 - 5)$
 4. $2(2x + 5)$ 5. $4(2x^2 + 1)$ 6. $2x(x + 4)$
 7. $7x(x - 3)$ 8. $3x(2x - 3)$ 9. $5x(2x + 7)$
 10. $2x(10x + 3)$ 11. $2(x^2 + 2x - 4)$
 12. $3(4x^2 - 3x + 5)$ 13. $(x - 7)(x + 7)$
 14. $(x + 6)^2$ 15. $(2x + 3)^2$
 16. $2(2x - 1)^2$ 17. $(3x - 11)(3x + 11)$
 18. $(3x + 1)^2$ 19. $(x - 8)^2$ 20. $3(2x - 5)(2x + 5)$
 21. $(\frac{1}{3}x - \frac{1}{2})(\frac{1}{3}x + \frac{1}{2})$ 22. $(5x - 2)^2$
 23. $5(x + 2)^2$ 24. $(7x - 1)^2$
 25. $(3x - 5)^2$ 26. $(5 - x)(9 + x)$
 27. $5(5 - x)(x - 1)$
 28. $9^2 + 40^2 = 41^2$; $9^2 + 12^2 = 15^2$
 29. $10^2 + 24^2 = 26^2$ 30. $11^2 + 60^2 = 61^2$

$$\begin{aligned} 31. A &= b_1h + \frac{1}{2}(b_2 - b_1)h \\ &= h[b_1 + \frac{1}{2}b_2 - \frac{1}{2}b_1] \\ &= h[\frac{1}{2}b_1 + \frac{1}{2}b_2] \\ &= \frac{1}{2}h[b_1 + b_2] \end{aligned}$$

32. $\pi x^2 - \pi y^2$, $\pi(x - y)(x + y)$, 21π cm²
 33. $81x^2 + 36x + 4$, $(9x + 2)^2$, $\frac{1}{3}$ ft = 4 in.

Lesson 10.5

1. $(x + 3)(x + 5)$ 2. $(x - 4)(x - 1)$
 3. $(x - 7)(x + 6)$ 4. $(x - 2)(x + 8)$
 5. $(2x + 1)(x - 3)$ 6. $(3x - 2)(x + 4)$
 7. $(7x - 3)(x - 4)$ 8. $(5x + 2)(x + 1)$
 9. $(2x - 3)(3x - 1)$ 10. $(5x + 1)(6x - 1)$
 11. $(4x - 3)(5x + 2)$ 12. $(2x + 3)(5x + 1)$
 13. Yes, $(4x + 3)(2x - 1)$ 14. No 15. No

Lesson 10.5 (continued)

16. Yes, $4(x+3)(x-1)$ 17. No
 18. Yes, $(6x-1)(2x+3)$
 19. No 20. No 21. Yes, $(2-3x)(1-5x)$
 22. Yes, $(3-4x)(2+x)$ 23. No 24. No
 25. $x+6$, $x-2$ 26. $2x+1$, $x+5$
 27. $t+8$; 8, 9, 10, 11, 12, 13
 28. $5+\frac{1}{4}t$; \$5.00, \$5.25, \$5.50, \$5.75, \$6.00

Lesson 10.6

1. -3, 2 2. 5, 3 3. 1, -4
 4. $2, -\frac{1}{3}$ 5. $3, \frac{3}{2}$ 6. $-\frac{2}{3}, -1$
 7. $-\frac{1}{2}, -\frac{3}{4}$ 8. $-\frac{1}{2}, \frac{5}{2}$ 9. $\frac{3}{4}, -\frac{1}{3}$
 10. $-\frac{5}{3}, \frac{3}{5}$ 11. $\frac{1}{4}, \frac{5}{2}$ 12. $-\frac{1}{3}, -\frac{1}{2}$
 13. $\frac{3}{2}, -\frac{3}{2}$ 14. 0, -6 15. ≈ 3.73 , ≈ 0.27
 16. 3, 7 17. ≈ -7.14 , ≈ 0.14
 18. ≈ -0.85 , ≈ 2.35 19. 0, 8
 20. -3 21. $-\frac{3}{2}, 2$ 22. $-\frac{1}{3}, \frac{1}{4}$
 23. $\frac{1}{2}, -4$ 24. ≈ 0.69 , ≈ -2.19
 25. $r = 12$ cm 26. 6 in. \times 10 in.
 27. Height = 6 in., base = 9 in. 28. 1 sec
 29. 11 in. \times 5 in. \times 2 in., 15 in. \times 9 in.
 30. 10 ft \times 17 ft, 54 ft

Lesson 10.7

1. $-5 \pm \sqrt{29}$ 2. $-3 \pm \sqrt{10}$ 3. $4 \pm \sqrt{13}$
 4. $3 \pm \sqrt{17}$ 5. $-6 \pm \sqrt{39}$ 6. $-2 \pm \sqrt{2}$
 7. $5 \pm \sqrt{21}$ 8. $-4 \pm 2\sqrt{2}$ 9. $-2 \pm \sqrt{7}$
 10. $4 \pm \sqrt{14}$ 11. $-2 \pm \sqrt{6}$ 12. $1 \pm \sqrt{5}$
 13. 3, 4 14. 0, 3 15. $\pm\sqrt{5}$
 16. $-2 \pm 2\sqrt{2}$ 17. $\pm\frac{5}{3}$ 18. $-\frac{3}{2}, 1$
 19. $-\frac{4 \pm \sqrt{30}}{2}$ 20. $-\frac{2 \pm \sqrt{10}}{3}$ 21. $\frac{1 \pm \sqrt{41}}{10}$
 22. $-\frac{1}{3}, -\frac{3}{2}$ 23. $10 \pm 2\sqrt{10}$ 24. $\frac{7 \pm \sqrt{29}}{2}$
 25. 23,328 26. ≈ 71.4 mi; ≈ 96.4 mi.
 27. 11 ft 28. $\frac{1}{4}$ mile

Lesson 11.1

1. $\frac{12}{5}$ 2. $-\frac{5}{2}$ 3. $\frac{14}{3}$ 4. $\frac{33}{5}$
 5. $-\frac{7}{2}$ 6. $\frac{3}{14}$ 7. $-\frac{9}{10}$ 8. $\frac{1}{2}$
 9. $\frac{17}{3}$ 10. -5, 1 11. 0, 3 12. 8, -2
 13. 3, 6 14. -3, 5 15. -6, -1
 16. 3, 6 17. 6, -1 18. $-\frac{3}{2}, 8$
 19. 11,550 in. or 962.5 ft
 20. 453.25 in. or ≈ 37.8 ft 21. 54 in.
 22. 29.7 in. 23. 0.75 ft or 9 in. 24. 27

Lesson 11.2

1. 9 2. 12% 3. 600 4. 160
 5. 120 6. 64% 7. 88% 8. 80
 9. 219 10. 138.6 11. 44% 12. 70

Lesson 11.3

13. 50% 14. $\approx 44\%$
 15. $\approx 1.90933 \times 10^8$ square miles
 16. $\approx 2.487 \times 10^8$ 17. ≈ 94 18. ≈ 6
 19. ≈ 1 20. ≈ 4 21. 16 22. 24
 23. 98 24. 62

Lesson 11.4

1. $y = 8x$ 2. $y = \frac{1}{4}x$ 3. $y = \frac{7}{3}x$
 4. $y = \frac{5}{8}x$ 5. $y = \frac{3}{8}x$ 6. $y = \frac{3}{2}x$
 7. $xy = 21$ 8. $xy = 10$ 9. $xy = 24$
 10. $xy = 8$ 11. $xy = 5$ 12. $xy = \frac{10}{3}$
 13. 4 14. 10 15. 18 16. $\frac{6}{5}$
 17. $\frac{9}{2}$ 18. 5 19. 3 20. $\frac{7}{4}$
 21. $\frac{3}{4}$ 22. 2 23. $\frac{4}{3}$ 24. $\frac{1}{24}$
 25. $C = 2\pi r$ 26. $f \cdot \gamma \approx 2.99 \times 10^5$
 27. 6 volts 28. 4 lb

Lesson 11.5

1. $\frac{1}{6}$ 2. $\frac{1}{40}$ or 0.025 3. $\frac{5}{6}$ 4. $\frac{6}{11}$
 5. 0.000002 6. 2,750,000 7. $\approx 297,576$
 8. $\frac{7}{160}$ 9. $\frac{7}{44} \approx 0.16$ 10. $\frac{3}{22} \approx 0.14$
 11. $\frac{2}{11} \approx 0.18$ 12. $\frac{5}{22} \approx 0.23$
 13. ≈ 0.086 , ≈ 0.059 , ≈ 0.048 , ≈ 0.035 , ≈ 0.026 ,
 ≈ 0.021 , ≈ 0.015

Lesson 11.6

1. All real numbers except 2
 2. All real numbers except -3
 3. All real numbers except 0 and 1
 4. All real numbers except -4
 5. All real numbers except 2 and -2
 6. All real numbers except 4 and -4
 7. All real numbers except 7 and -7
 8. All real numbers except 3 and -3
 9. All real numbers except -2 and -1
 10. All real numbers except 4 and -3
 11. All real numbers except -1 and $\frac{1}{2}$
 12. All real numbers except $\frac{2}{3}$ and 4
 13. $\frac{x}{3}$ 14. $\frac{5x}{7}$ 15. $\frac{3x}{2}$ 16. $\frac{6}{7x^3}$
 17. $\frac{5}{x+3}$ 18. $\frac{2x+1}{4}$ 19. $\frac{x-1}{6}$ 20. $\frac{4}{x+3}$
 21. $\frac{x-5}{x+3}$ 22. $\frac{x+1}{2x-1}$ 23. $\frac{x+6}{x-4}$ 24. $\frac{x-4}{x-3}$
 25. $\frac{6(t+4)}{18-0.5t+0.01t^2}$ 26. 600,000
 27. $\frac{8t+11}{3-0.2t+0.1t^2}$ 28. ≈ 8273 lb
 29. $\frac{5}{2}x(2x+3)$, $45x$, $\frac{2x+3}{18}$ 30. $\frac{x-3}{x-2}$

Lesson 11.7

1. $\frac{8}{3}$ 2. $\frac{14}{x}$ 3. $\frac{32x}{15}$ 4. $\frac{3}{2x^2}$
 5. $\frac{3x}{4}$ 6. $\frac{30}{x-4}$ 7. $\frac{4(x-7)}{x(x+7)}$
 8. $\frac{7x}{2x-1}$ 9. $\frac{2(x+1)}{(x+3)(x-5)}$

Lesson 11.6 (continued)

10. $\frac{2(5x+3)}{5x-3}$ 11. $\frac{x-2}{3x(x-3)}$ 12. $\frac{x+4}{x-1}$
 13. $\frac{x^4}{6}$ 14. $-\frac{5}{4}$ 15. $\frac{3}{4x^4}$
 16. $\frac{x}{x-1}$ 17. $-\frac{1}{7}$ 18. $\frac{8}{x-5}$
 19. $\frac{x-2}{x+8}$ 20. $\frac{1}{8(x-7)}$ 21. $\frac{2(x-1)}{x+1}$
 22. $\frac{x+6}{x+1}$ 23. $\frac{2x}{3}$ 24. $\frac{2}{x^2(x-1)}$
 25. $\frac{2(10+3t)}{11-t}$ 26. $\frac{150}{150-t}$ 27. $2x^2$

Lesson 11.7

1. $6x - 4$ 2. $\frac{3}{2}x^2 + 4x - 1$
 3. $\frac{1}{3}x^2 + \frac{4}{3}$ 4. $7x + 5 - \frac{2}{x}$ 5. $x^2 + 1 + \frac{5}{x}$
 6. $x^9 - \frac{18}{x}$ 7. $-9x^2 - 3x + 6 - \frac{1}{x}$
 8. $x + 6$ 9. $8x^2 - 4x + 5 + \frac{6}{x}$
 10. $3x - 2 + \frac{5}{2x}$
 11. $5x^2 + 4x - \frac{7}{2} - \frac{1}{2x}$ 12. $4x^2 + 2x - 1 + \frac{1}{2x}$
 13. $2 - \frac{7}{x+3}$ 14. $13 + \frac{30}{x-2}$ 15. $2x - 4 - \frac{1}{x-1}$
 16. $x + 2 - \frac{4}{x-2}$ 17. $5x + 1 - \frac{3}{x+3}$
 18. $3x + 5 + \frac{10}{x-5}$
 19. $x + 8 + \frac{26}{x-4}$ 20. $3 - \frac{5}{3x-1}$
 21. $5 + \frac{3}{2x+5}$ 22. $5x - \frac{1}{2} + \frac{15}{2(2x+1)}$
 23. $2x - 1 - \frac{1}{2x-3}$ 24. $6x - 3 - \frac{2}{4x+1}$
 25. $x^2 + \frac{3}{2}x$ 26. $4x + 5 - \frac{6}{x}$
 27. $\frac{1}{4} - \frac{19}{20t+168}$
 $\approx 0.14, \approx 0.16, \approx 0.17, \approx 0.18, \approx 0.19, \approx 0.20$;
 more
 28. $\frac{1}{2} + \frac{5}{t+5}$,
 $1.5, \approx 1.2, \approx 1.06, \approx 0.95, \approx 0.88, \approx 0.83$; less

Lesson 11.8

1. $\frac{12}{7}$ 2. 6 3. 6 4. $\frac{5}{6}$
 5. 3, -6 6. $\frac{19}{2}$ 7. $\frac{23}{16}$ 8. $-\frac{11}{5}$
 9. 3, 2 10. -4, 2 11. 3, 1 12. $-\frac{1}{2}$
 13. -1, 3 14. -5, 2 15. 1, -1
 16. 8, -2 17. $\frac{5}{2}, -3$ 18. 1, -3
 19. -1, -2 20. -1 21. 2, 5
 22. -1, 1 23. 5 24. 0, $-\frac{1}{2}$
 25. 8 26. 50
 27. $\frac{1}{4}$ of a question per minute
 $\frac{1}{2}$ of a question per minute

Lesson 12.1

1. Yes. No 2 ordered pairs have the same 1st coordinate.
 2. No. Two ordered pairs have same 1st coordinate.

3. Yes. No 2 ordered pairs have the same 1st coordinate.

4. No 5. Yes, {1, 2, 3, 4}

6. Yes, {2, 3, 4, 5}

7. No 8. No 9. Yes, {0, 2, 4, 6, 8}

10. -8, 7 11. -10, -4 12. 22, -2

13. 0, 22 14. -1, 27 15. -18, -18

16. 47, 7 17. 47, -1 18. -8, 42

19. -5, -3 20. 11, 66 21. 90, 12

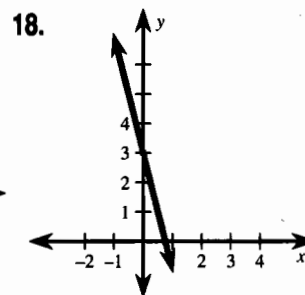
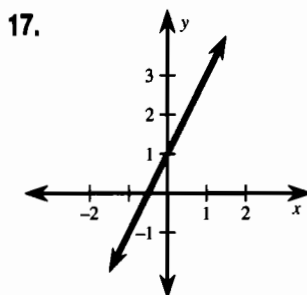
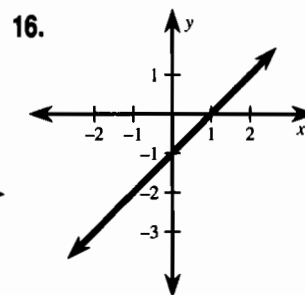
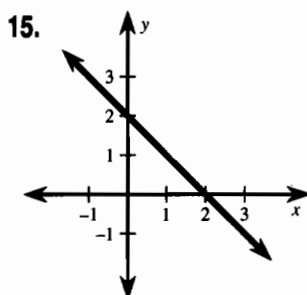
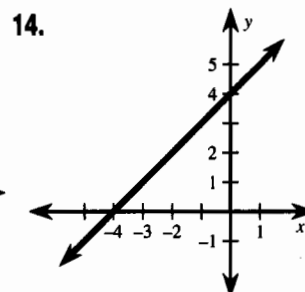
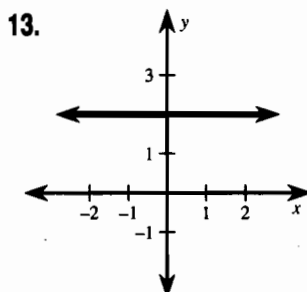
22. Yes. No 2 ordered pairs have the same 1st coordinate.

23. Yes. No 2 ordered pairs have the same 1st coordinate.

24. $f(1988) = \$500,000$

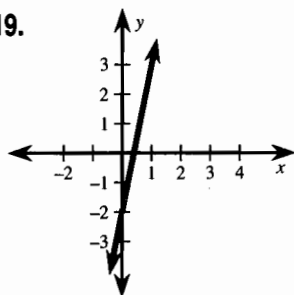
Lesson 12.2

1. $f(x) = x - 5$ 2. $f(x) = x + 7$
 3. $f(x) = 2x + 3$ 4. $f(x) = -3x + 2$
 5. $f(x) = \frac{1}{2}x + 5$ 6. $f(x) = -x - 3$
 7. $f(x) = \frac{2}{3}x + 6$ 8. $f(x) = 6x - 5$
 9. $f(x) = -\frac{3}{4}x - 1$ 10. $f(x) = -5x - 2$
 11. $f(x) = 3x - 5$ 12. $f(x) = -\frac{1}{3}x - 2$

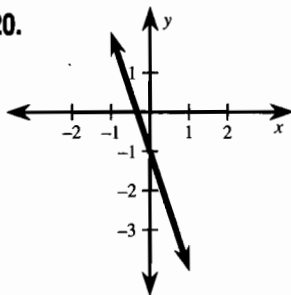


Lesson 12.2 (continued)

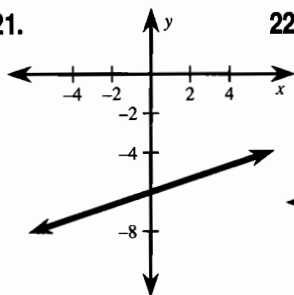
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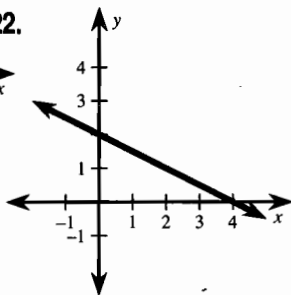
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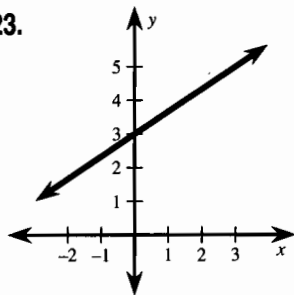
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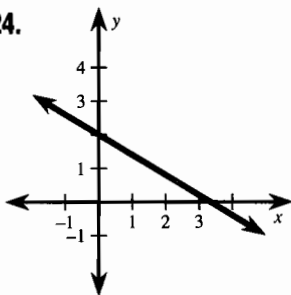
22.



23.



24.

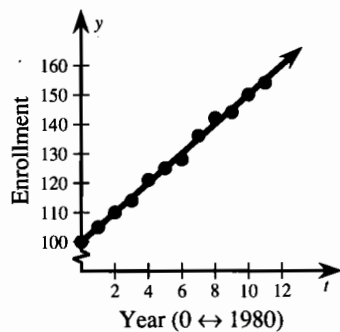


25. $f(m) = \frac{1}{100}m$, 1.85 hr

26. $f(t) = 100 \cdot 0.06t$, \$42

27. $f(t) = 4,100,000t + 6,000,000$, 47,000,000

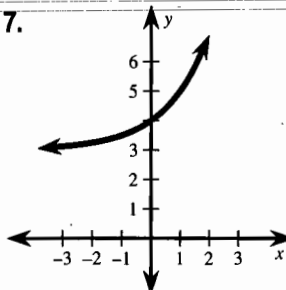
28. $f(t) = 5t + 100$



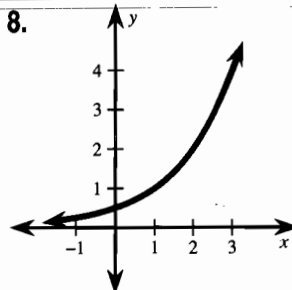
Lesson 12.3

1. g is shifted left 1 unit
2. g is shifted down 2 units
3. g is reflected in the x -axis
4. g is shifted up 5 units
5. g is shifted right 2 units
6. g is shifted left 3 units

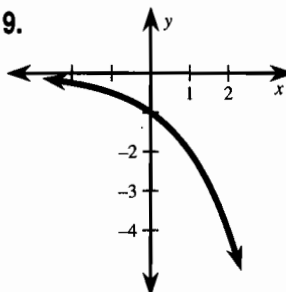
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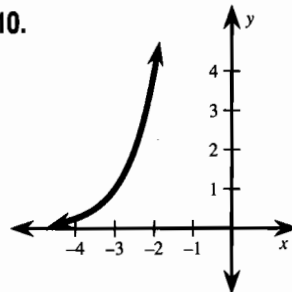
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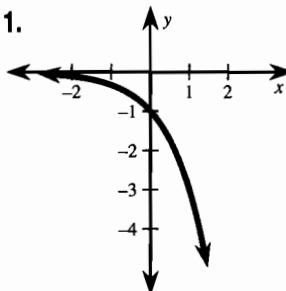
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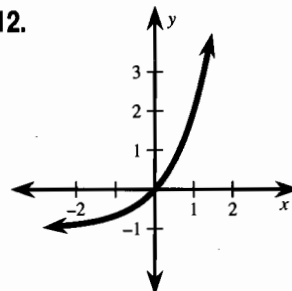
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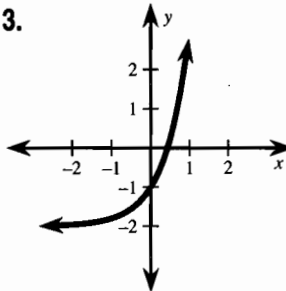
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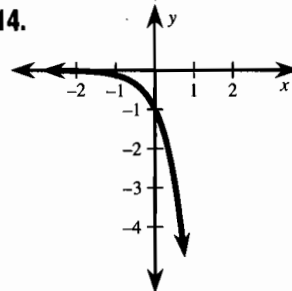
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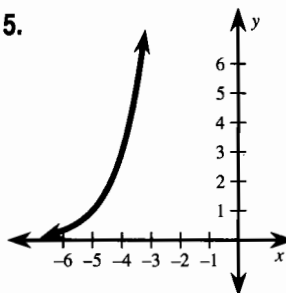
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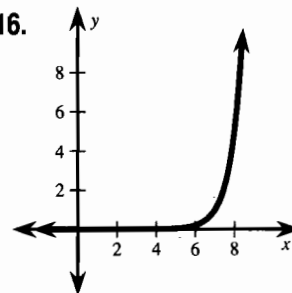
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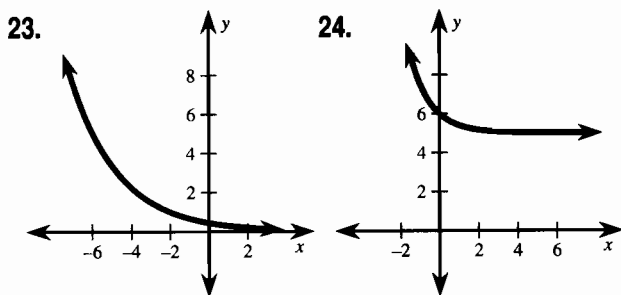
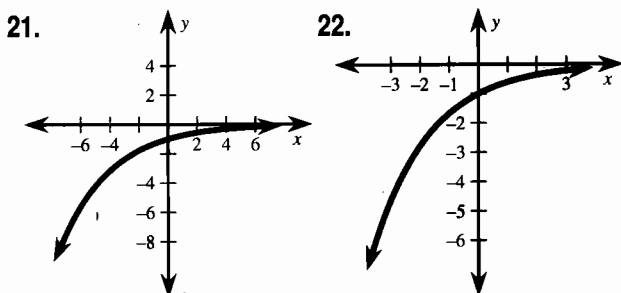
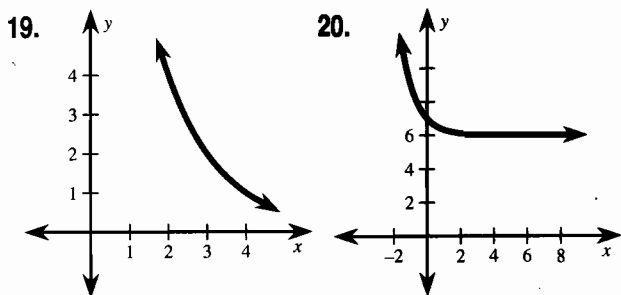
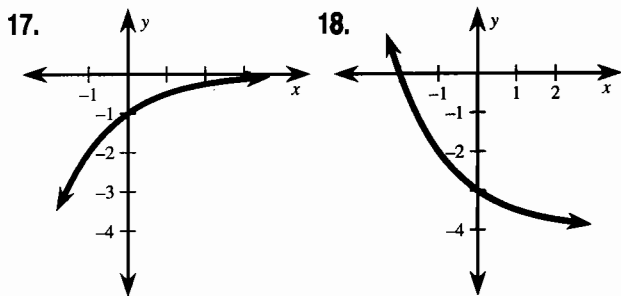
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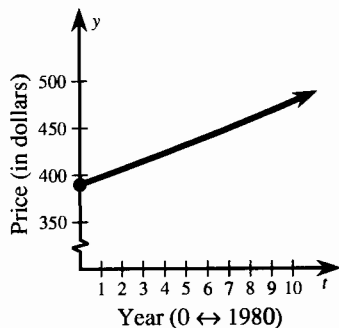
16.



■ Lesson 12.3 (continued)

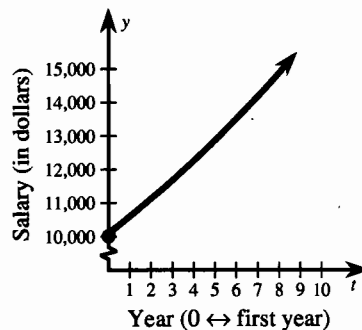


25. $A(t) = 400(1.02)^t - 10$

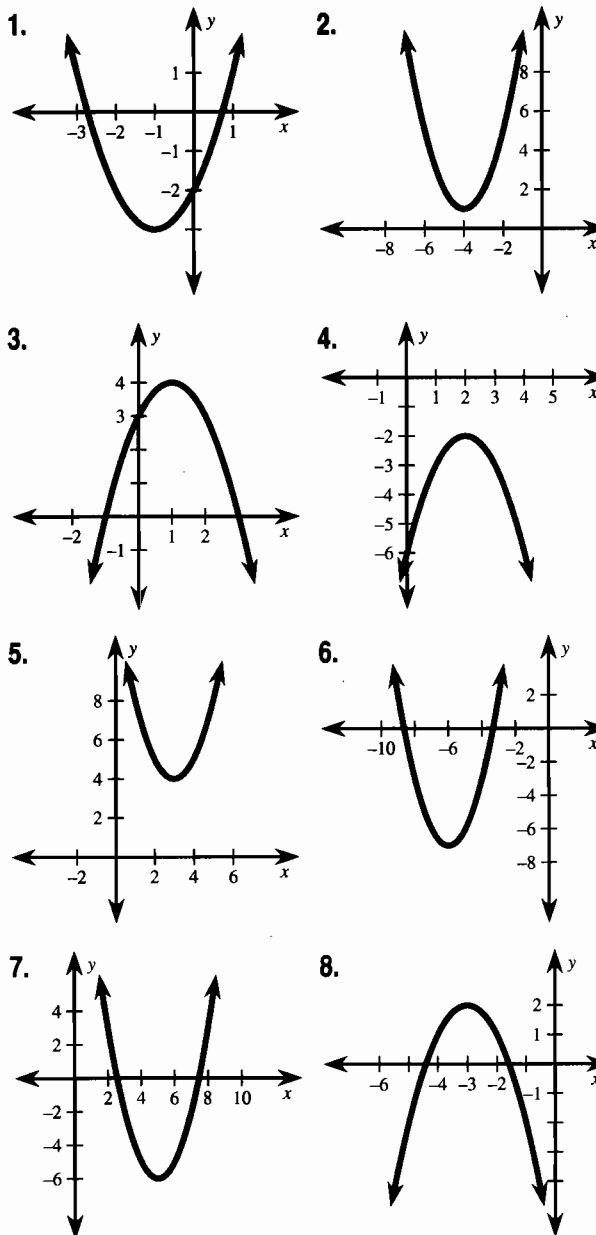


26. $g(t) = 15 + (0.9)^t$ 27. $\approx 17,600$

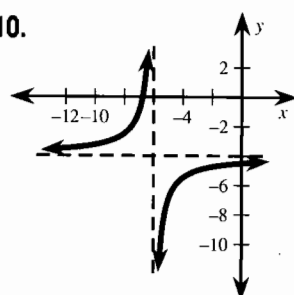
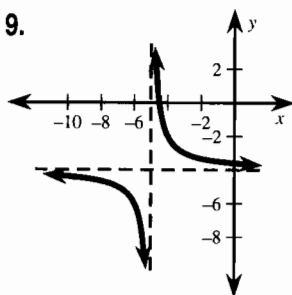
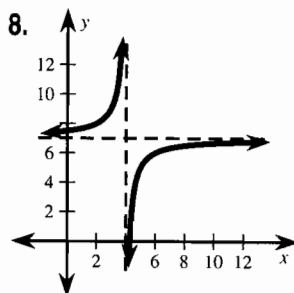
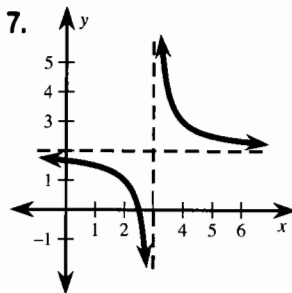
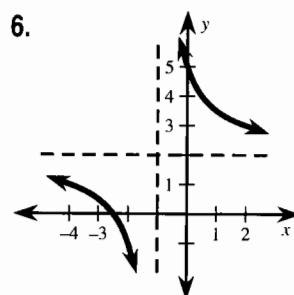
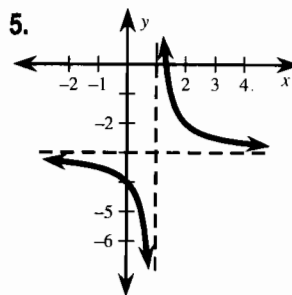
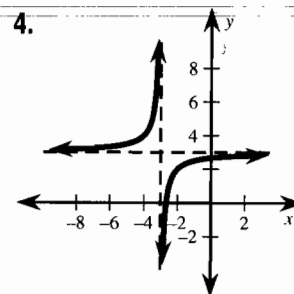
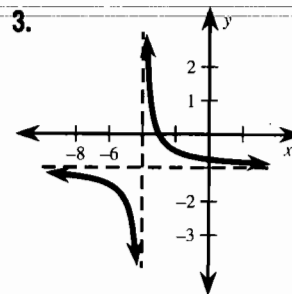
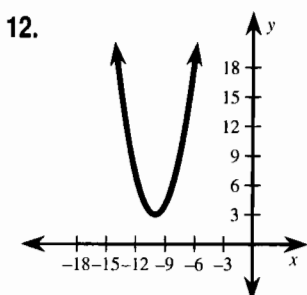
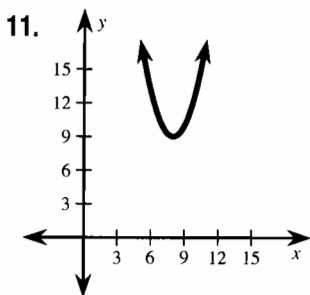
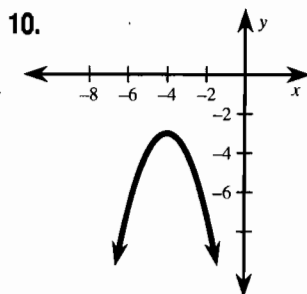
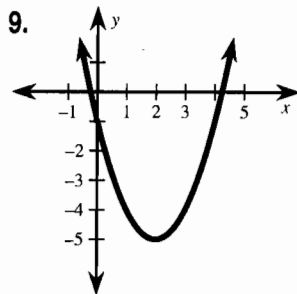
28. $g(t) = 100 + 10,000(1.05)^t$



■ Lesson 12.4

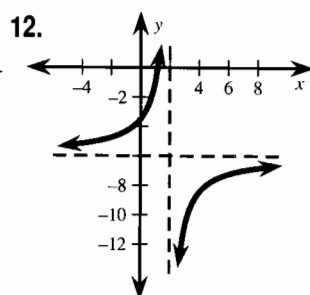
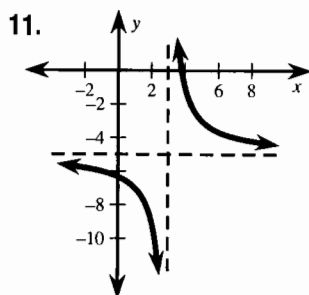
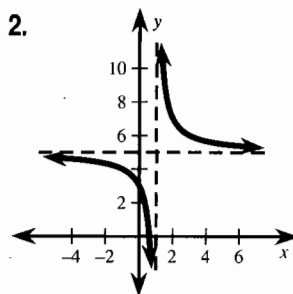
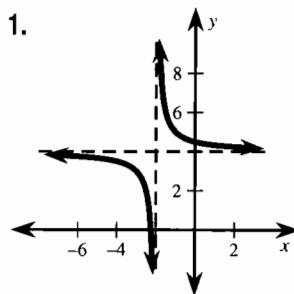


Lesson 12.4 (continued)



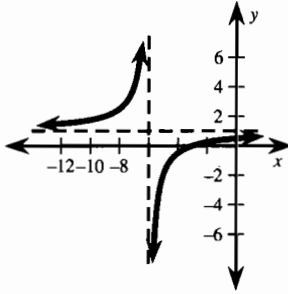
13. $f(x) = (x + 1)^2 - 5$
14. $f(x) = (x - 5)^2 + 2$
15. $f(x) = (x - 2)^2 - 6$
16. $f(x) = (x + 6)^2 + 3$
17. $f(x) = -(x + 3)^2 - 8$
18. $f(x) = -(x - 4)^2 + 10$
19. $f(x) = 2(x + 3)^2 - 7$
20. $f(x) = 3(x - 2)^2 + 6$
21. $f(x) = 4(x - 1)^2 - 8$
22. $f(x) = 2(x - 1)^2 - 14$
23. $f(x) = -5(x - 2)^2 - 5$
24. $f(x) = 6(x + 4)^2 - 6$
25. 5 ft, $\frac{1}{4}$ sec
26. $f(x) = -\frac{3}{25}(x - 5)^2 + 6$, 6 ft
27. $f(x) = -\frac{1}{20}(x - 20)^2 + 20$, 20 ft, 40 ft
28. 40 ft over, 15 ft up

Lesson 12.5

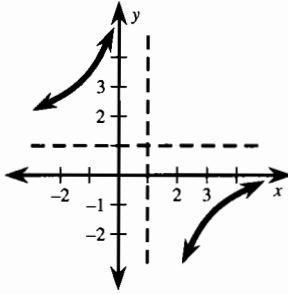


Lesson 12.5 (continued)

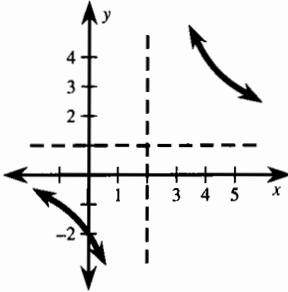
13. $-\frac{3}{x+6} + 1$



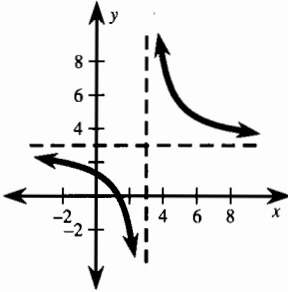
14. $-\frac{5}{x-1} + 1$



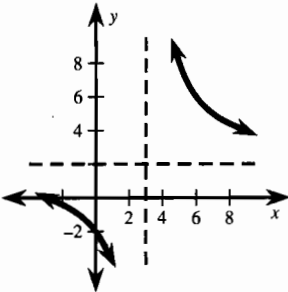
15. $f(x) = \frac{6}{x-2} + 1$



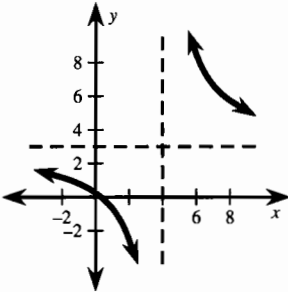
16. $f(x) = \frac{5}{x-3} + 3$



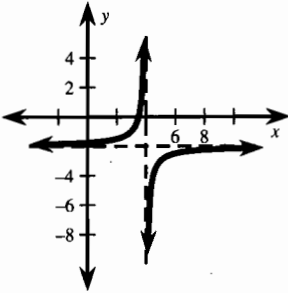
17. $f(x) = \frac{12}{x-3} + 2$



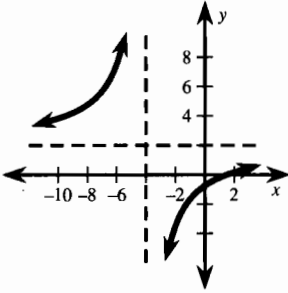
18. $f(x) = \frac{11}{x-4} + 3$



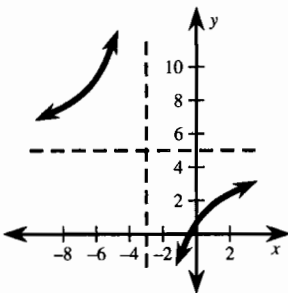
19. $f(x) = -\frac{1}{x-4} - 2$



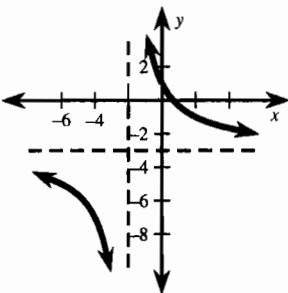
20. $f(x) = -\frac{11}{x+4} + 2$



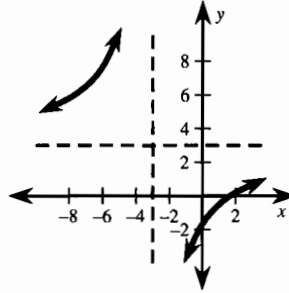
21. $f(x) = -\frac{13}{x+3} + 5$



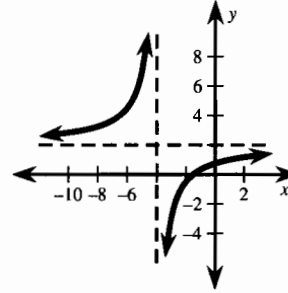
22. $f(x) = \frac{8}{x+2} - 3$



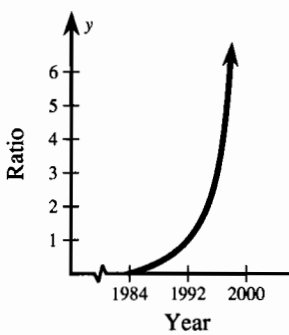
23. $f(x) = -\frac{14}{x+3} + 3$



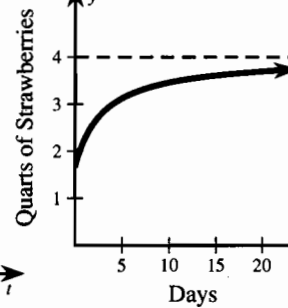
24. $f(x) = -\frac{5}{x+4} + 2$



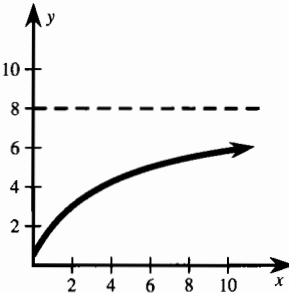
25. $f(t) = 1$ in 1992,
half-way done
with school



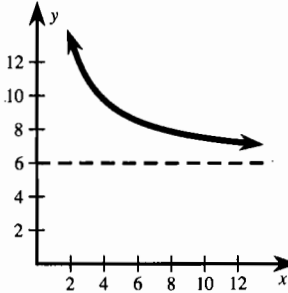
26. $f(t) = \frac{5+4t}{3+t} = 4 + \frac{-7}{t+3}$



27. $f(x) = \frac{8x+2}{x+4} = 8 - \frac{30}{x+4}$



28. $f(x) = \frac{6x+15}{x} = 6 + \frac{15}{x}$



Lesson 12.6

1. 11.5 2. 12 3. 235 4. 28

5. 64 6. 5.8

7.

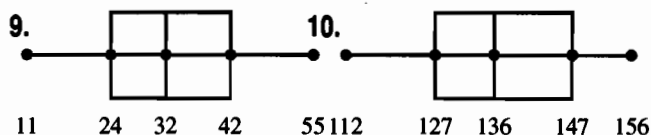
0	0	6			
1	0	5	0	6	
2	3	1	4	1	0
3	2	1	0	8	
4	3	1	7		
5	1	5	6		

0, 6, 10, 10, 15, 16, 20, 21, 21, 23, 24, 30,
31, 32, 38, 41, 43, 47, 51, 55, 56

Lesson 12.6 (continued)

8.	11	1
	12	3 5 1 3
	13	8 7 8
	14	4
	15	6 3 6
	16	4 8
	17	2 1 9
	18	3

111, 121, 123, 123, 125, 137, 138, 138, 144,
153, 156, 156, 164, 168, 171, 172, 179, 183



11.	59	1
	26	7
	15	9
	14	7
	12	2
	11	1
	10	4
	9	7 7 8
	8	4 2 7 5
	7	0 7 1 0 7
	6	8

591, 267, 159, 147, 122, 111, 104, 98, 97,
97, 87, 85, 84, 82, 77, 77, 71, 70, 70, 68

12.	73	7
	34	4
	29	9
	17	1
	16	5
	11	0
	10	0 4
	9	4 5
	8	5
	7	6 8 5 6
	6	5 5 0 0
	5	8

73.7, 34.4, 29.9, 17.1, 16.5, 11.0, 10.4, 10.0,
9.5, 9.4, 8.5, 7.8, 7.6, 7.6, 7.5, 6.5, 6.0,
6.0, 5.8

13. 8.8, 8.6, 8.6, 8.5, 8.1, 7.1, 7.0, 6.6, 6.2, 6.1,
5.9, 5.9, 5.8, 5.7

Lesson 12.7

- Mean: 78.45, median: 79.5, mode: 76
- Mean: $\approx 11,375$, median: 8878, mode: none
- Mean: ≈ 1.3 , median: 1, mode: 1
- Mean: 10.7, median: 8, mode: 4

Lesson 13.1

- 5
- 13
- ≈ 2.24
- ≈ 7.07
- ≈ 10.05
- ≈ 9.06
- ≈ 12.53
- ≈ 1.41
- ≈ 3.61
- ≈ 2.24
- ≈ 8.54
- ≈ 3.61
- Yes
- No
- Yes
- No
- No
- Yes
- (3, 7)
- (5, -2)
- (-2, -5)
- (6, -4)
- (-3, 6)
- (-1, $\frac{5}{2}$)
- (-4, $\frac{3}{2}$)
- ($\frac{5}{2}$, -1)
- ($-\frac{3}{2}$, $-\frac{1}{2}$)
- ($\frac{5}{2}$, $\frac{3}{2}$)
- ($-\frac{5}{2}$, $\frac{9}{2}$)
- ($-\frac{3}{2}$, $-\frac{11}{2}$)
- ≈ 60.83 ft
- ≈ 288 mi
- \$725,000
- Midpoints of diagonals are the same.
($\frac{11}{2}$, $\frac{3}{2}$)

Lesson 13.2

- $4\sqrt{5}$
- $7\sqrt{2}$
- $3\sqrt{6}$
- $\frac{4}{5}$
- 1
- $\frac{\sqrt{3}}{5}$
- $\frac{2\sqrt{5}}{7}$
- $\sqrt{2}$
- $\frac{\sqrt{2}}{2}$
- $\frac{4\sqrt{2}}{3}$
- $\frac{5\sqrt{3}}{3}$
- $\frac{2\sqrt{6}}{9}$
- $3\sqrt{2}$
- $2\sqrt{21}$
- $5\sqrt{2}$
- 63
- $\frac{5}{9}$
- 40
- $\frac{9}{2}$
- $\frac{5\sqrt{3}}{3}$
- $4\sqrt{2}$
- $\frac{\sqrt{15}}{5}$
- $\frac{\sqrt{5}}{10}$
- $3\sqrt{2}$
- $3\sqrt{10} \approx 9.49$
- $12\pi \approx 37.68$
- $4\sqrt{2}\pi \approx 17.76$
- $5\sqrt{17}$ in. ≈ 20.62 in.
- $\frac{500}{39}\sqrt{21} \approx 58.75$, $\frac{10}{3}\sqrt{210} \approx 48.30$, $20\sqrt{6} \approx 48.99$, $\frac{2000}{7} \approx 285.71$

Lesson 13.3

- $6\sqrt{3}$
 - $9\sqrt{5}$
 - $4\sqrt{2}$
 - $-3\sqrt{6}$
 - $3\sqrt{5}$
 - $-2\sqrt{3}$
 - $7\sqrt{2}$
 - $-\sqrt{3}$
 - $3\sqrt{2}$
 - $2\sqrt{7}$
 - $-2\sqrt{2}$
 - $-5\sqrt{10}$
 - $6 + \sqrt{10}$
 - $\sqrt{35}$
 - $6\sqrt{2} - 8\sqrt{3}$
 - $7 + 4\sqrt{3}$
 - $21 - 8\sqrt{5}$
 - $19 - 6\sqrt{2}$
 - $17 + 4\sqrt{15}$
 - 2
 - 4
 - $4 + 3\sqrt{3}$
 - $3\sqrt{5} - 5$
 - $9\sqrt{6} - 22$
 - Yes
 - No
 - No
 - Yes
 - No
 - Yes
 - ≈ 7071 ;
 ≈ 7071 , ≈ 7294 , ≈ 7510 , ≈ 7720 , ≈ 7925 ,
 ≈ 8124 , ≈ 8319 , ≈ 8509 , ≈ 8695 , ≈ 8877
 - $P = 8\sqrt{7} + 16$
 - ≈ 61.5 ft
- $A = 21 + 24\sqrt{7}$

Lesson 13.4

- 25
- No solution
- 5
- 32
- 27
- No solution
- 69
- 6
- $\frac{7}{4}$

■ Lesson 13.4 (continued)

10. No solution 11. $-\frac{39}{10}$ 12. $-\frac{3}{7}$ 13. 3
 14. 3 15. 2 16. No solution 17. 3
 18. 2, 4 19. 7, 2 20. $\frac{5}{2}, \frac{3}{2}$
 21. No solution 22. $\frac{5}{8}$ 23. 4 24. 4
 25. $48\pi \approx 151$ square inches 26. $r = 1$ in.
 27. 2,415,000 28. ≈ 14 ft

■ Lesson 13.6

1. $a(b + c + d) = a((b + c) + d)$ *Associative Property*
 $= a(b + c) + ad$ *Distributive Property*
 $= ab + ac + ad$ *Distributive Property*
2. $(a + b)^2 = (a + b)(a + b)$ *Definition of Exponents*
 $= (a + b)a + (a + b)b$ *Distributive Property*
 $= a \cdot a + b \cdot a + a \cdot b + b \cdot b$ *Distributive Property*
 $= a^2 + ab + ab + b^2$ *Definition of Exponents*
 $= a^2 + 1(ab) + 1(ab) + b^2$ *Multiplicative Identity Axiom*
 $= a^2 + (1 + 1)(ab) + b^2$ *Distributive Property*
 $= a^2 + 2ab + b^2$ $1 + 1 = 2$
3. $(a - b)^2 = (a - b)(a - b)$ *Definition of Exponents*
 $= (a - b)(a + (-b))$ *Subtraction Rule*
 $= (a - b)a + (a - b)(-b)$ *Distributive Property*
 $= (a + (-b))a + (a + (-b))(-b)$ *Subtraction Rule*
 $= a \cdot a + (-b)a + a(-b) + (-b)(-b)$ *Distributive Property*
 $= a^2 + (-ab) + (-ab) + b^2$ *Def. of Exponents and Prop. of Multiplication*
 $= a^2 + (1)(-ab) + (1)(-ab) + b^2$ *Property of Multiplication*
 $= a^2 + (1 + 1)(-ab) + b^2$ *Distributive Property*
 $= a^2 + 2(-ab) + b^2$ $1 + 1 = 2$
 $= a^2 - 2ab + b^2$ *Property of Multiplication*
4. $(-1)(a) + a = (-1)(a) + (1)(a)$ *Multiplicative Identity Axiom*
 $= (a)(-1) + (a)(1)$ *Commutative Property of Multiplication*
 $= a(-1 + 1)$ *Distributive Property*
 $= a(0)$ *Inverse Property of Addition*
 $= 0$ *Property of Multiplication*
 $= -a + a$ *Inverse Property of Addition*

So, $(-1)(a) = -a$ because $(-1)(a) + a = -a + a$, $(-1)(a) = -a$.

■ Lesson 13.5

1. $\tan A = \frac{3}{2}, \tan B = \frac{2}{3}$
 2. $\tan A = \frac{\sqrt{3}}{3}, \tan B = \sqrt{3}$
 3. $\tan A \approx 0.49, \tan B \approx 2.05$
 4. $B = 50^\circ, b \approx 9.53, c \approx 12.45$
 5. $B = 67^\circ, a \approx 1.70, c \approx 4.35$
 6. $B = 79^\circ, b \approx 25.72, c \approx 26.20$
 7. ≈ 9.9 ft 8. ≈ 45 ft
 9. ≈ 741 miles; ≈ 894 miles

■ **Lesson 13.6 (continued)**

5. $(-a)(-b) = (-1)(a)(-1)(b)$ *Property of Multiplication (Exercise 4)*
 $= (-1)(-1)(a)(b)$ *Commutative Property of Multiplication*
 $= ab$ *Property of Multiplication*

6. $(-a)(b) = (-1)(a)(b)$ *Property of Multiplication (Exercise 4)*
 $= (a)(-1)(b)$ *Commutative Property of Multiplication*
 $= (a)(-b)$ *Property of Multiplication (Exercise 4)*

7. Answers vary. 8. Answers vary.

9. $\frac{0}{0}$ is undefined. 10. Answers vary.

11. Area I + Area II = Total Area
 $a \cdot b + a \cdot c = a(b + c)$

12. Area I + Area II + Area III = Total Area
 $ab + ac + ad = a(b + c + d)$

13. Subtraction is not commutative in Step 3.

14. In Step 3, $-a + a \neq -(a + a)$