LESSON 7-1

Practice and Problem Solving: A/B

1. $x = -1,\ x = -\frac{1}{4},$ or $x = 1$
2. $x = -4,\ x = 0,$ or $x = 6$
3. $x = -7,\ x = 0,$ or $x = 1$
4. $x = -2,\ x = 0,$ or $x = 4$
5. $x = -1;\ f(x) = (x+1)(x+1)(x+1)$
6. $x = -4$ or $x = 3;$
   $f(x) = (x-3)(x+4)(x+4)$
7. $x = -7,\ x = -4,$ or $x = 1$
8. $x = -5,\ x = -\frac{1}{3},$ or $x = 2$
9. a. $x^3 + x^2 - 2x - 8 = 0$
   b. $\pm 1,\ \pm 2,\ \pm 4,\ \pm 8$
   c. $x = 2$ or $x = \frac{-3 \pm i\sqrt{7}}{2}$; no, 2 of the roots are irrational numbers
   d. 2 m wide, 4 m long, and 1 m deep

LESSON 7-2

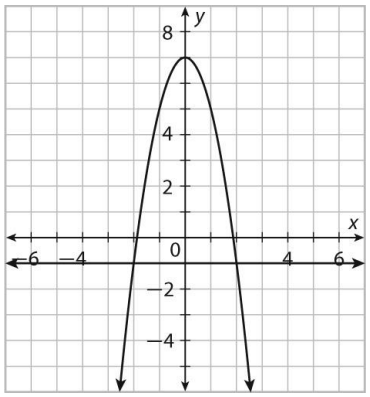
Practice and Problem Solving: A/B

1. $P(x) = x^3 - 2x^2 - 11x + 12$
2. $P(x) = x^3 - \frac{7}{2}x^2 - \frac{17}{2}x + 5$
3. $P(x) = x^5 - 4x^4 + x^3 - 4x^2 - 12x + 48$
4. $P(x) = x^5 + 5x^4 + 7x^3 + 35x^2 - 18x - 90$
5. $x = i, -i, -3,$ and 5
6. $x = 2, -2, 2i,$ and $-2i$
7. $x = -4i, 4i, 2,$ and -6
8. $x = -3i, 3i,$ and -3
9. $V(t) = t^3 - 10t^2 + 23t - 14$

LESSON 11-1

Practice and Problem Solving: A/B

1. $x = -2$ and $x = 2$



2. factoring:
$$-2x^2 + 7 = -1$$
$$-2x^2 + 8 = 0$$
$$-2(x^2 + 4) = 0$$
$$-2(x+2)(x-2) = 0$$
$x = -2$ or $x = 2$
3. taking square roots:
$$-2x^2 + 7 = -1$$
$$-2x^2 = -8$$
$$x^2 = 4$$
$$x = \pm\sqrt{4}$$
$$x = \pm 2$$
4. -16
5. -11
6. $-\frac{7}{9}$
7. real solutions; $x = \pm 2\sqrt{\frac{3}{7}}$
8. imaginary solutions; $x = \pm i\sqrt{6}$
9. imaginary solutions; $x = \pm i$
10. $\sqrt{3} \approx 1.7$ sec
11. $\frac{\sqrt{13}}{4} \approx 0.9$ sec

LESSON 11-2

Practice and Problem Solving: A/B

1. $5i$
2. $21i$
3. $-9i$
4. 0
5. $-3 + \sqrt{3}$
6. $\frac{1}{2}$
7. $1 - \sqrt{2}$
8. $2 + 12i$
9. $-3 - 4i$
10. $7 - 11i$
11. $8 + 2i$
12. $14 + 5i$