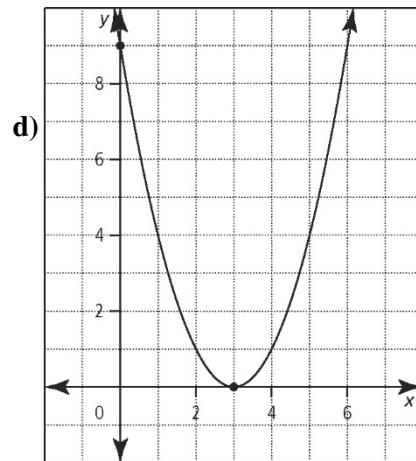
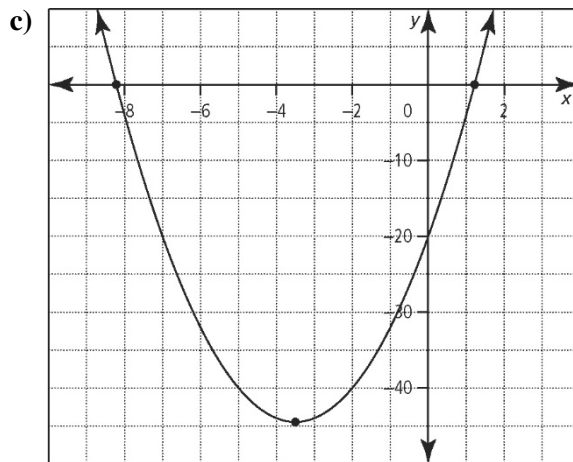
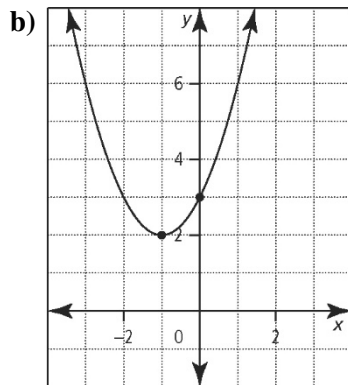
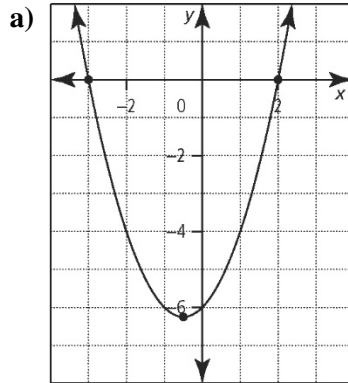


Section 3.1 Extra Practice

1. How many x-intercepts does the graph of each quadratic function have?



2. What are the roots of the quadratic equations graphed in #1?
3. Solve by graphing.
 - a) $0 = -a^2 - 3a - 4$
 - b) $12 = -3b^2 - 12b$
 - c) $6c^2 + 30c = 0$
 - d) $d^2 - 4 = 0$
4. Determine the roots for each quadratic equation. Where integral roots cannot be found, estimate the roots to the nearest tenth.
 - a) $0 = x^2 + 2.4x - 3.85$
 - b) $z^2 - 15 = 0$
 - c) $t^2 + t = -1$
 - d) $0 = -u^2 - u + 5$
5. Solve by graphing.
 - a) $t^2 - 5t - 150 = 0$
 - b) $h^2 - 400 = 0$
 - c) $0 = x^2 + 0.6x - 0.05$
 - d) $5y^2 + 3y + 100 = 0$

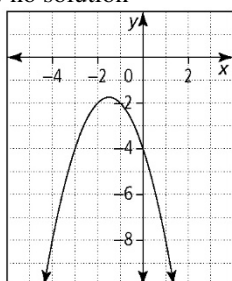
6. For what values of m would the equation $x^2 + 8x + m = 0$ have
- one real root or two equal real roots?
 - two real distinct roots?
 - no real roots?
7. An object is launched at 21.5 m/s from a height of 2.4 m. The equation for the object's height, h , measured in

metres, t seconds after launch is $h = -4.9t^2 + 21.5t + 2.4$. After how many seconds will the object hit the ground? Express your answer to the nearest tenth of a second.

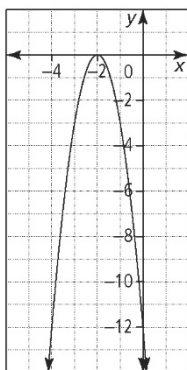
8. A right triangle has one side that is 7 cm longer than its shortest side. The triangle's hypotenuse is 8 cm longer than the shortest side. What are the dimensions of the triangle?

Key

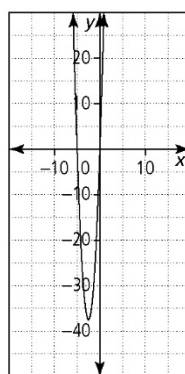
1. a) 2 b) none c) 2 d) 1
 2. a) -3, 2 b) no real roots c) -8.2, 1.2 d) 3
 3. a) no solution



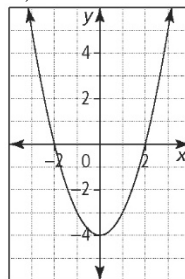
b) -2



c) 0, -5



d) 2, -2



4. a) 1.1, -3.5 b) -3.9, 3.9 c) no solution
 d) -2.8, 1.8

5. Example:

- 10, 15
 - 20, 20
 - 0.7, 0.1
 - no solution
6. a) $m = 16$ b) $m < 16$ c) $m > 16$
 7. 4.5 s
 8. 5 cm, 12 cm, 13 cm

Section 3.2 Extra Practice

6. Solve each quadratic equation by factoring. Verify your answer.

a) $x^2 - 2x - 15 = 0$

b) $2x^2 + 8x = 64$

c) $\frac{1}{2}x^2 - \frac{9}{2}x + 9 = 0$

d) $7x^2 - 35 = 0$

7. Solve each quadratic equation by factoring.

a) $6x^2 - 5x = 4$

b) $7x^2 = 34x + 5$

c) $5x^2 = 9x + 2$

d) $2x^2 + 9x = 18$

8. Determine the real roots of each quadratic equation.

a) $64x^2 - 169 = 0$

b) $18x^2 - 98 = 0$

c) $80x^2 = 5$

d) $(x + 1)^2 - 81 = 0$

9. Determine the real roots to each quadratic equation by factoring.

a) $6x^2 + 2x - 4 = 0$

b) $10x^2 - 45x + 20 = 0$

c) $18x^2 = 3x + 3$

d) $x^2 - \frac{5}{2}x - 21 = 0$

10. Solve each quadratic equation.

a) $9x^2 + 6x + 1 = 0$

b) $20x^2 - 60x + 45 = 0$

c) $x^2 + 5x + \frac{25}{4} = 0$

d) $1.6 - 5.6x + 4.9x^2 = 0$

KEY

6. a) $-3, 5$ b) $4, -8$ c) $3, 6$ d) $\pm\sqrt{5}$

7. a) $-\frac{1}{2}, \frac{4}{3}$ b) $5, -\frac{1}{7}$ c) $-\frac{1}{5}, 2$ d) $\frac{3}{2}, -6$

8. a) $\frac{13}{8}, -\frac{13}{8}$ b) $\frac{7}{3}, -\frac{7}{3}$ c) $\frac{1}{4}, -\frac{1}{4}$ d) $8, -10$

9. a) $-1, \frac{2}{3}$ b) $\frac{1}{2}, 4$ c) $-\frac{1}{3}, \frac{1}{2}$ d) $6, -\frac{7}{2}$

10. a) $-\frac{1}{3}$ b) $\frac{3}{2}$ c) $-\frac{5}{2}$ d) $\frac{4}{7}$

