

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) $\frac{4}{7}$

Section 3.3 Extra Practice

- What value of k makes each expression a perfect square?
 - $x^2 + 12x + k$
 - $x^2 - 20x + k$
 - $x^2 - 7x + k$
 - $x^2 + \frac{4}{5}x + k$
- Complete the square to write each quadratic equation in the form $(x + a)^2 = b$.
 - $x^2 + 6x + 4 = 0$
 - $2x^2 - 16x + 10 = 0$
 - $-3x^2 + 15x - 2 = 0$
 - $\frac{1}{2}x^2 + 5x - 4 = 0$
- Solve each quadratic equation, to the nearest tenth.
 - $(x - 4)^2 = 25$
 - $\left(x + \frac{1}{2}\right)^2 = \frac{1}{4}$
 - $(x - 0.1)^2 = 0.64$
 - $4(x + 7)^2 = 1$
- Solve each quadratic equation. Express answers as exact roots in simplest form.
 - $x^2 + 2x - 2 = 0$
 - $x^2 - 5x + 3 = 0$
 - $x^2 + 0.6x - 0.16 = 0$
 - $x^2 - \frac{6}{7}x + \frac{9}{49} = 0$
- Solve each quadratic equation by completing the square. Express answers in simplest radical form.
 - $4x^2 + x - 3 = 0$
 - $-3x^2 - 6x + 1 = 0$
 - $\frac{1}{4}x^2 + x - 5 = 0$
 - $-0.1x^2 + 0.6x - 0.5 = 0$
- Solve each quadratic equation by completing the square. Express answers to the nearest hundredth.
 - $-2x^2 + 9x + 2 = 0$
 - $3x^2 - 3x - 1 = 0$
 - $\frac{1}{5}x^2 + 2x + 1 = 0$
 - $6x^2 + 3x - 2 = 0$
- Two numbers have a sum of 22. What are the numbers if their product is 96?

KEY

- a) 36 b) 100 c) $\frac{49}{4}$ d) $\frac{4}{25}$
- a) $(x + 3)^2 = 5$ b) $(x - 4)^2 = 11$ c) $\left(x - \frac{5}{2}\right)^2 = \frac{67}{12}$ d) $(x + 5)^2 = 33$
- a) -1, 9 b) 0, -1 c) 0.9, -0.7 d) -7.5, -6.5
- a) $-1 \pm \sqrt{3}$ b) $\frac{5 \pm \sqrt{13}}{2}$ c) 0.2, -0.8 d) $\frac{3}{7}$
- a) $\frac{3}{4}, -1$ b) $-1 \pm \frac{2}{\sqrt{3}}$ c) $-2 \pm 2\sqrt{6}$ d) 1, 5
- a) -0.21, 4.71 b) -0.26, 1.26 c) -9.47, -0.53 d) -0.88, 0.38
- 6, 16