

Section 4.2 Extra Practice

1. Factor.

- a) $x^2 - x - 20$
- b) $3x^2 - 30x + 63$
- c) $-4x^2 - 12x - 8$
- d) $\frac{1}{2}x^2 - \frac{1}{2}x - 6$

2. Factor.

- a) $14x^2 + 3x - 5$
- b) $3x^2 + 11x - 20$
- c) $4x^2 + 7xy + 3y^2$
- d) $6x^2 - 17x + 12$

3. Factor completely.

- a) $12x^2 - 4xy - 8y^2$
- b) $6x^2y + 27xy + 30y$
- c) $140x^2 - 450xy + 250y^2$
- d) $42x^3 + 77x^2y + 21xy^2$

4. Factor.

- a) $x^2 - 49y^2$
- b) $25x^2 - 9$
- c) $x^2 - \frac{25}{4}y^2$
- d) $(x + 1)^2 - (x - 7)^2$

5. Factor.

- a) $(x - 1)^2 - 2(x - 1) - 35$
- b) $6(2x + 1)^2 - 7(2x + 1) - 20$
- c) $2(7x)^2 + 2(7x) - 24$
- d) $8\left(\frac{1}{2}x^2\right)^2 - 6\left(\frac{1}{2}x^2\right) - 9$

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.

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

