

UNIT 3 • MODELING AND ANALYZING QUADRATIC FUNCTIONS**Lesson 1: Creating and Solving Quadratic Equations in One Variable****Practice 3.1.5: Solving Quadratic Equations by Factoring****A**

For problems 1–7, solve each quadratic equation by factoring.

1. $x^2 - 2x - 48 = 0$

2. $2y^2 + 9y = 35$

3. $5n^2 - 9n = 0$

4. $2x^2 - 32 = 0$

5. $3y^2 - 24y = -45$

6. $60a^2 - 190a = 70$

7. $(x + 4)(x - 8) = 28$

For problems 8–10, each given equation represents the height (h) of an object above the ground after it has traveled in the air for t seconds. Solve each problem using the provided information.

8. A child throws a water balloon down out of a window. Substitute 0 for h into the equation $h = -16t^2 - 10t + 6$ to determine how many seconds it takes for the water balloon to reach the ground.

9. A person tosses a coin down from a balcony into a fountain below. Substitute 12 for h into the equation $h = -5t^2 - 2t + 36$ to determine how many seconds it will take before the coin passes a sign that is 12 feet above the ground.

10. A boater launches a firework up into the air. Substitute 125 for h into the equation $h = -5t^2 + 50t$ to determine how many seconds it will take before the firework reaches its maximum height of 125 meters and explodes.