

Unit 8: Quadratic Equations

ADVANCED

Name: _____ Date: _____

Solve each equation or problem. Give exact answers (integers, fractions like $\frac{3}{4}$, or values with sqrt); list both solutions when there are two.

1. Solve by factoring: $x^2 - 13x + 42 = 0$

Answer: _____

2. Solve for all real values: $9x^2 - 49 = 0$

Answer: _____

3. Solve by factoring (note the leading coefficient):
 $6x^2 + x - 15 = 0$

Answer: _____

4. Solve by completing the square: $x^2 + 6x - 16 = 0$

Answer: _____

5. Solve using the quadratic formula, giving exact answers: $2x^2 - 4x - 3 = 0$

Answer: _____

6. Find the value of the discriminant ($b^2 - 4ac$) for
 $3x^2 - 5x + 4 = 0$

Answer: _____

7. For $x^2 - 7x + 10 = 0$, find the sum of the two roots plus the product of the two roots.

Answer: _____

8. Solve by completing the square: $2x^2 + 8x - 10 = 0$

Answer: _____

9. Solve by factoring: $x^2 - 2x - 63 = 0$

Answer: _____

10. Solve using the quadratic formula: $4x^2 - 12x + 9 = 0$

Answer: _____

11. The product of two consecutive positive integers is 156. What is the smaller integer?

Answer: _____

12. Solve $x^2 - 8x + 11 = 0$ by completing the square and give the larger root exactly.

Answer: _____