

Algebra Worksheet

Name: _____ Date: _____

Instructions: Solve each problem. Show all work for full credit.

Part A: Linear Equations

1. Solve for x : $2x + 5 = 13$

2. Solve for y : $3y - 7 = 2y + 4$

3. Solve for x : $\frac{x}{4} + 2 = 7$

Part B: Quadratic Equations

4. Factor completely: $x^2 + 5x + 6$

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

6. Find the vertex of $f(x) = x^2 - 4x + 3$

Part C: Word Problems

7. A rectangle has a length that is 3 cm more than twice its width. If the perimeter is 48 cm, find the dimensions.

8. John is 5 years older than Mary. The sum of their ages is 35. How old is each person?

Part D: Challenge Problems

9. Solve the system of equations:

$$2x + y = 7$$

$$x - y = 2$$

10. Simplify: $(x^2 - 9) \div (x - 3)$