Math 2: Unit 4 Review for test **Name**_____ **Period:**_____

Read each problem and use the method described in the instructions. Simplify your answers.

1. Simplify the radical: $\sqrt{90}$

2. Simplify the expression: $7\sqrt{3} + \sqrt{5} - \sqrt{12}$

3. Write the quadratic formula:

4. Solve the equation using square roots. **a.** $x^2 + 13 = 77$ **b.** $9x^2 - 3 = 46$

5. Solve the equation by factoring. **a.** $x^2 + 10x + 16 = 0$ **b.** $2x^2 - x - 3 = 0$

6. Solve by completing the square. **a.** $x^2 - 8x = -3$ **b.** $x^2 + 16x + 20 = 0$

7. Solve by using the quadratic formula. **a.** $x^2 - 5x - 2 = 0$ **b.** $-5x^2 + 4x + 3 = 0$

8. Find the square root of each number. **a.** $\sqrt{-81}$ **b.** $\sqrt{-20}$

9. Find the sum or difference. **a.** $(10 + 3i) + (8 - 7i)$ **b.** $(13 + 4i) - (5 - 3i)$

10. Find the product. **a.** $3i(5 - 2i)$ **b.** $(7 - 3i)(2 + 4i)$

11. Use any method to solve. **a.** $5x^2 - 11 = 169$ **b.** $4x^2 - 6x + 5 = 0$

c. $3x^2 + 13x - 10 = 0$ **d.** Find zeros:

$f(x) = x^2 - 6x - 40$

12. How many real solutions does the following equation have? $x^2 + 8x + 14 = 0$

13. Solve by substitution: $y = 3x$

$y = x^2 + 7x - 5$

14. Write in vertex form: $y = x^2 + 6x + 1$