Mastery Algebra 1 **Chapter 9 Review #2** Name _____

1. Find the vertex: $y = -3x^2 - 6x + 18$

2. Find the axis of symmetry: $y = -x^2 + 14x + 2$

3. Solve by using a square root:
   a) $x^2 - 25 = 0$
   b) $2x^2 + 3 = 111$
   c) $x^2 = 32$

4. Solve by factoring:
   a) $x^2 + 6x - 16 = 0$
   b) $w^2 + 3w = 10$
   c) $2c^2 - 10c - 12 = 0$

5. Solve by completing the square.
   a) $(x+3)^2 - 49 = 0$
   b) $y^2 + 10y = 12$
   c) $z^2 - 8z + 7 = 0$

6. Solve by the quadratic formula:
   a) $3x^2 - 48 = 0$
   b) $2x^2 + 9x - 11 = 0$
   c) $x^2 + 5x + 9 = 0$

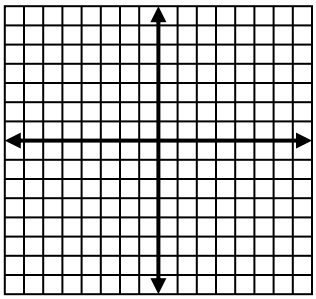
Scrambled answers:

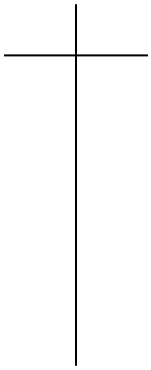
$\{-8, 2\}, \{\pm 3\sqrt{6}\}, \{-5, 2\}, \{-1, 6\}, \{\pm 5\}, x = 7, (-1, 21), \{\pm 4\sqrt{2}\}, \{-10, 4\}, \{1, 7\}, \{\pm 4\}, \left\{-\frac{11}{2}, 1\right\}, \{-5 \pm \sqrt{37}\}, \varnothing$

7. Solve by graphing:

$x^2 + 4x + 3 = 0$

What is the vertex_____





Solutions:_____

8. Solve by completing the square.

$x^2 + 4x + 3 = 0$

Solutions:_____

9. Solve using the quadratic formula.

$x^2 + 4x + 3 = 0$

Solutions:_____

10. Solve by factoring.

$x^2 + 4x + 3 = 0$

Solutions:_____