Algebra 1 Name_____

Unit 4 Final Test Review

Date_____ Period____

Simplify each expression.

1) $(3x^2 + 4x) + (8x + 8x^2 - 2x^4)$

2) $(4 + 8x^3 + x^4) - (5x^4 - 1 - 5x^3)$

Find each product.

3) $(x + 5)(2x + 8)$

4) $(8p - 3)(4p^2 - 3p - 1)$

Solve each equation by taking square roots.

5) $4r^2 + 10 = 42$

6) $7x^2 - 10 = -114$

Solve each equation with the quadratic formula.

7) $x^2 + 11x + 24 = 0$

Solve each equation by completing the square.

8) $n^2 + 12n - 90 = 0$

Factor each completely.

9) $m^2 - 5m - 36$

10) $5x^2 + 23x - 42$

11) $16p^2 - 9$

12) $x^2 + 6x + 9$

Solve each equation by factoring.

13) $x^2 + x - 6 = 0$

14) $2n^2 - 9n - 35 = 0$

Sketch the graph of each function. State the vertex, the transformations, the axis of symmetry, and the zeros for each function.

15) $y = -\frac{1}{2}(x + 2)^2 + 2$

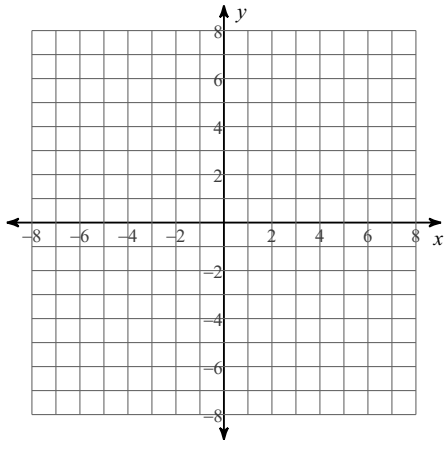
Vertex:_____

Transformations:

-
-
-
-

Axis of Symmetry: _____

Zeros: _____



16) $y = -2x^2 + 16x - 36$

Vertex:_____

Transformations:

-
-
-

Axis of Symmetry: _____

Zeros: _____