Unit 8: Changing Forms of Quadratic Functions Name_____

12.REV.1 ~ End of Chapter Review

Past due on_____ Period____

Describe the transformations made to the graph of $y = f(x)$.

1) $y = 3(x + 2)^2 + 1$

2) $y = -4(x - 1)^2 - 7$

3) $y = \frac{1}{2}(x + 6)^2$

4) $y = -\frac{3}{4}x^2 + 5$

Write each polynomial in standard form. Then classify it by its number of terms - monomial, binomial, or trinomial - and by its degree.

5) $-6x + 6x^2 - 5$

6) $-5x + 10x^3$

7) $-7 - 10m^2$

8) $6n^6$

Simplify each expression and write in standard form.

9) $(8 + p - 8p^3) + (6 - 8p - 6p^3)$

10) $(4 - 8n^4 - 6n^3) - (7n^3 - 1 + 3n^4)$

Find each product and write in standard form.

11) $(2x + 5)(3x + 10)$

12) $(5b - 7)(4b - 9)$

13) $(3a - 5)(4a^2 - 5a + 1)$

14) $(3m + 8)^2$

Factor each polynomial completely.

15) $n^2 + 4n - 77$

16) $a^2 - 5a - 66$

17) $3x^2 + 10x - 8$

18) $9k^2 - 24k + 12$

19) $4n^2 - 19n + 12$

20) $-4k^2 - 8k - 3$

21) $49v^2 - 28v + 4$

22) $25x^2 - 4$

Find the value that completes the square and then rewrite as a perfect square in factored form.

23) $m^2 + 28m + \_\_$

24) $n^2 - 20n + \_\_$

Complete the square and write the vertex form of the quadratic function. Identify the coordinates of its vertex and state whether the vertex represents a maximum or a minimum value. SHOW ALL WORK.

25) $y = x^2 - 4x - 60$

26) $y = 2x^2 + 10x + 12$