Name:_____ Date:_____ Pd:_____

Algebra 2 Unit 2 TEST Review: QUADRATICS

Directions: FACTOR (HINT: expression must be written in standard form: $y = ax^2 + bx + c$)

1) $3x^2 - 20 + 11x$

2) $x^2 + 9x - 36$

3. Write this equation in vertex form by finding the vertex or completing the square: $f(x) = x^2 + 8x - 3$

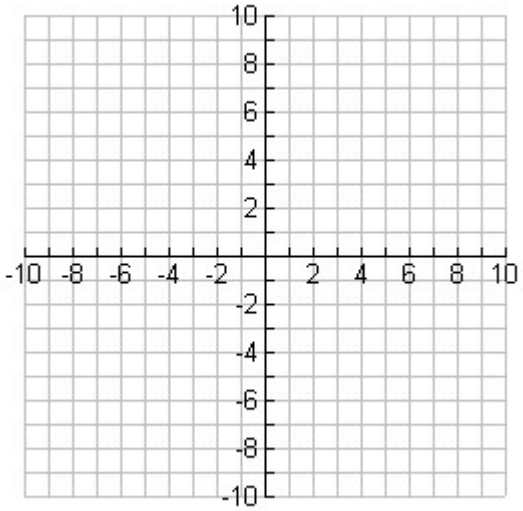
Vertex form: $f(x) = a(x-h)^2 + k$

Vertex: (h, k)

Vertex form: $f(x) =$_____ Vertex:_____

For the problems below, make sure your answers are in the right format (point, equation of line, number, …)

Find the information below then sketch the graph:



4. $f(x) = (x-1)^2 - 5$

Which way does it open?_____

Has a MAX or MIN?_____

Value of _____

Vertex: _____

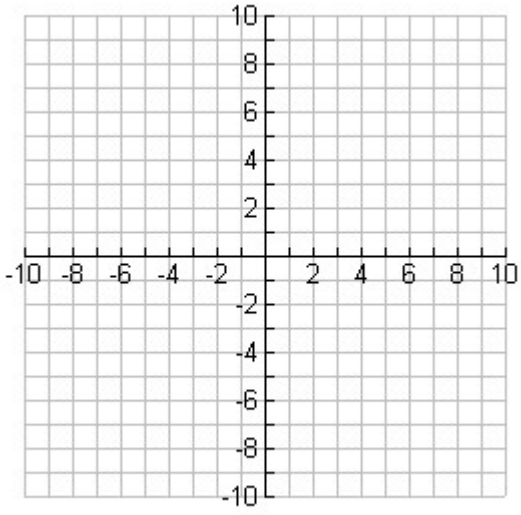
Axis of Symmetry:_____

Domain(INT)_____ Range(INT)_____

(SET)_____ (SET)_____

4b) Write the function in standard form: _____

5. $f(x) = x^2 + 6x + 5$



Which way does it open?_____

Has a MAX or MIN?_____

Value of _____

Vertex: _____

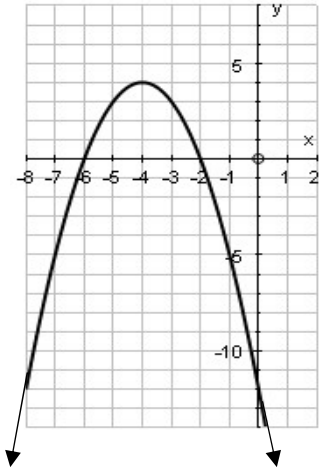
Axis of Symmetry:_____

Domain(INT)_____ Range(INT)_____

(SET)_____ (SET)_____

5b) Write the function in vertex form. Start by finding $x = \frac{-b}{2a}$: _____

6. Here's a graph…tell me the info:



Which way does it open? Max / Min value:

Has a MAX or MIN?_____ y-intercept:_____

Vertex: _____ x-intercepts:_____

Axis of Symmetry:_____ Given that a = -1, write the equation in vertex form:

_____

Domain(INT)_____ Range(INT)_____

(SET)_____ (SET)_____

7. Factor each of the following.

a) $3x^3 + 9x^2 - 27x + 6$

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

_____ _____

7) CONTINUED. Factor each of the following.

c) $5x^2 - 12x + 4$

d) $2x^2 - 4xy - 16y^2$

e) $81x^2 - 16$

f) $3x^2 - 7x - 6$

g) $x^2 + 4$

h) $2x^3y^2 - 2xy^2$

8. Find the following information for the quadratic function $f(x) = 4x^2 + 8x - 5$.

Vertex is_____ **Min** or **Max**? Value of_____ **Domain**(INT):_____

(SET):_____

Range(INT):_____

(SET):_____

Directions: Fill in the blank for each expression in order to complete the square. USE: $\left(\frac{b}{2}\right)^2$

9) $x^2 + 4x +$ _____

10) $x^2 + 2x +$ _____

11) $x^2 - 8x +$ _____

Directions:

Write each equation in vertex form by finding its vertex or completing the square.

12) $y = x^2 - 6x - 2$

13) $y = x^2 - 4x + 1$

Write the function in standard form.

14) $f(x) = 3(x + 1)^2 - 4$