Acc Algebra I Unit 6 Extra Test Review

Name _____ Date _____

Give the characteristics for the given quadratic:

1) Domain: _____ Range: _____ Vertex Form: _____

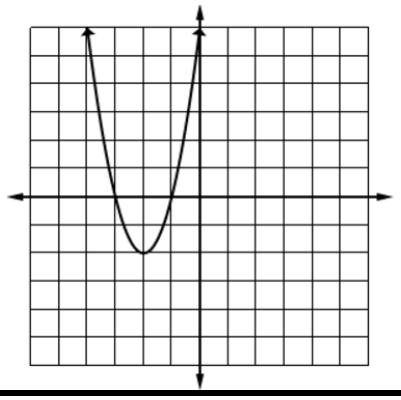
Vertex: _____ Axis of Symmetry: _____

Solution(s): _____ Y Intercept(s): _____

Increasing: _____ Decreasing: _____

End Behavior: $x \to \infty$, $f(x) \to$ _____ $x \to -\infty$, $f(x) \to$ _____

ROC [-4, -2] _____ ROC $-1 \leq x \leq 4$ _____



2) Give the transformations for the following quadratic: $f(x) = -\frac{1}{2}(x+5)^2 - 7$

Convert each of the equations from Standard to Vertex Form, or vice-versa. <u>You must show your work to receive credit!</u>

3) $f(x) = 4x^2 - 16x - 5$

4) $f(x) = -3(x-1)^2 + 6$

Solve the following problems.

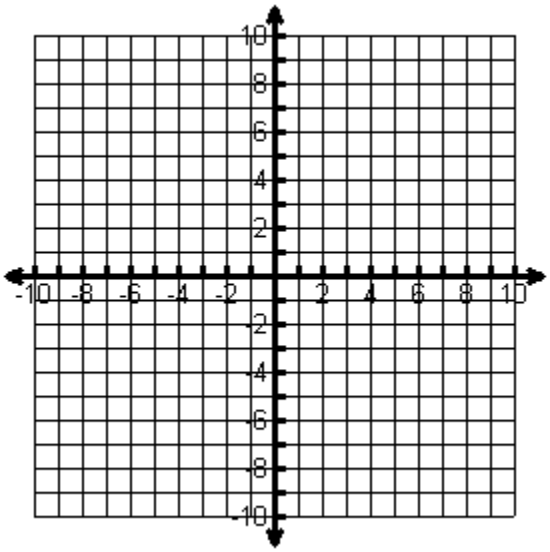
5) You launch a model rocket with an initial speed of 38 feet per second. The launch can be modeled using the formula $h(t) = -16t^2 + vt$. When does it reach its maximum height?

6) April shoots an arrow upward at a speed of 134 feet per second from a platform. The pathway of the arrow can be represented by the equation $h(t) = -16t^2 + 134t + 12$, where *h* is the height and *t* is the time in seconds. Describe what the arrow is doing at 3 seconds.

7) A missile is launched along the path determined by the equation $f(x) = -4x^2 + 72x$, where *f(x)* is the height of the missile in feet x seconds after it has been launched. A plane is flying at a height of 300 feet. Is the plane in danger? Why or why not?

Sketch the graph <u>by hand</u> for the given quadratic:

8) $x^2 + 4x = 5$



Find the point(s) of intersection for the following system:

9) $f(x) = -3x^2 + 6x + 1$
$g(x) = -6x + 10$

<u>Additional Topics:</u>

- Graph a quadratic given vertex **<u>OR</u>** standard form
- Comparing quadratics in different forms (chart vs. graph vs. equation)