Graphing Quadratics Homework

1) $y = -2(x - 1)^2 + 5$

Axis of Symmetry is $x =$ _____

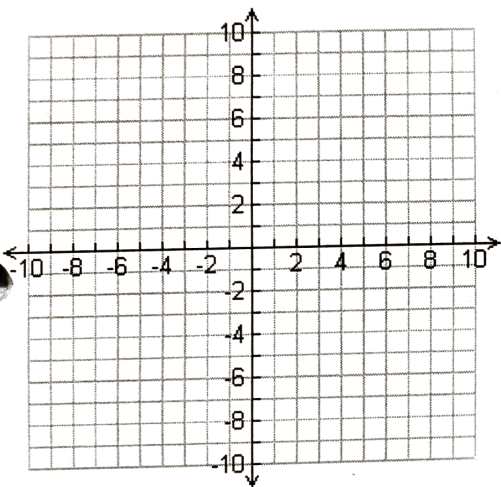Vertex: (_____, _____)

Opens up or down?

Find pts 1 unit L/R of vertex:

(_____, _____) and (_____, _____)

y-intercept : (0, _____)

2) $y = 2x^2 - 8x + 6$ a=   b=   c=

Opens up or down?

Is vertex a max or min?

Y-intercept: (0, ____)
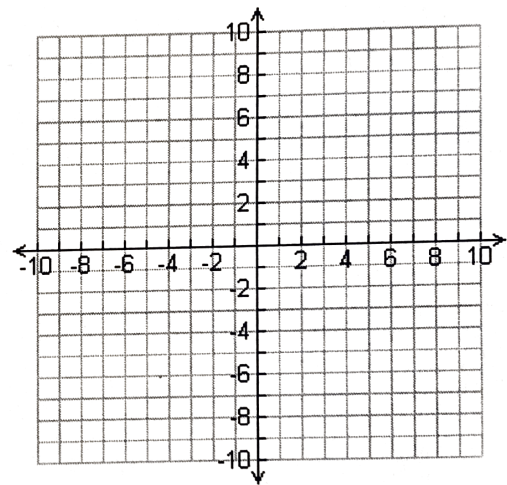
Axis of Symmetry is x=_____

Vertex: (_____, _____)

Find pts 1 unit L/R of vertex at

(_____, _____) and (_____, _____)

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

x-intercepts: (_____, 0) (_____, 0)
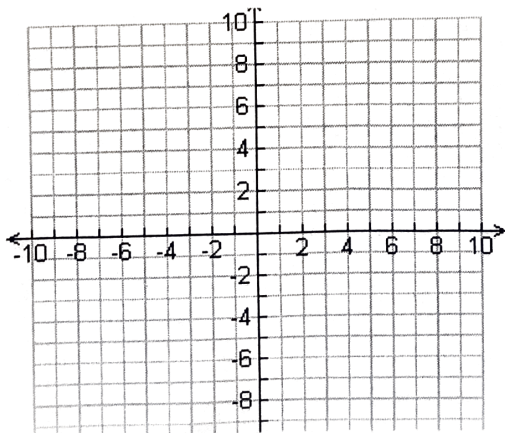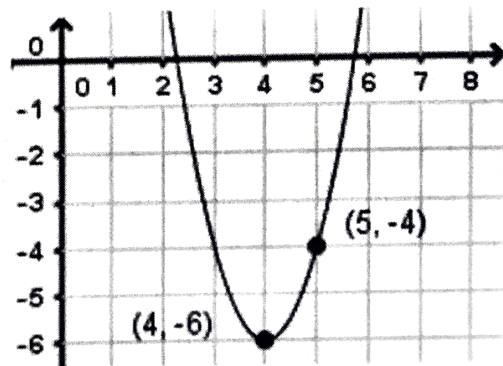
Axis of Symmetry is x=_____

Vertex: (_____, _____)

y-intercept: (0,_____)

Extra point: (_____, _____)

4) Write each equation

(5, -4)

(4, -6)

Standard Form: _____

Vertex Form: _____

Intercept Form: _____

Graphing Quadratics Homework

Use vertex form to write a quadratic equation from given points

Use each table to write a quadratic function in vertex form, $y = a(x - h)^2 + k$.
Then rewrite the function in standard form, $y = ax^2 + bx + c$.

The vertex of the parabola is (2, 5).

x	y
−1	59
1	11
2	5
3	11
5	59

The vertex of the parabola is (−2, −7).

x	y
0	−27
−1	−12
−2	−7
−3	−12
−4	−27

The vertex of the function is (6, −8).

x	y
10	24
8	0
6	−8
4	0
2	24

The vertex of the function is (4, 7).

x	y
0	−1
2	5
4	7
6	5
8	−1

A house painter standing on a ladder drops a paintbrush, which falls to the ground. The paintbrush's height above the ground (in feet) is given by a function of the form $f(t) = a(t - h)^2$ where t is the time (in seconds) after the paintbrush is dropped.
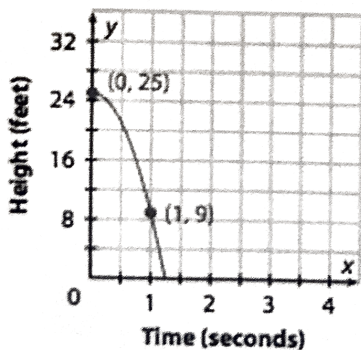
A rock is knocked off a cliff into the water far below. The falling rock's height above the water (in feet) is given by a function of the form $f(t) = a(t - h)^2 + k$ where t is the ti (in seconds) after the rock begins to fall.
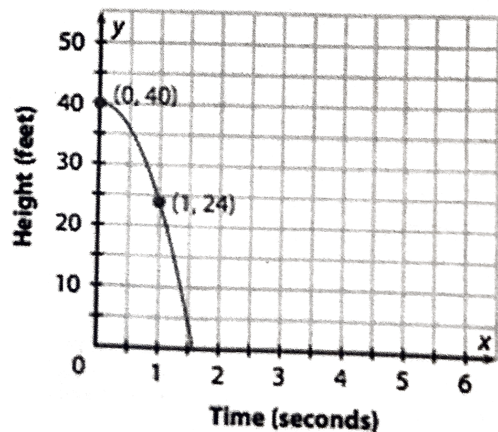
Graphing Quadratic Functions Study Guide

Standard Form

$$y = ax^2 + bx + c$$

Vertex Form

$$y = a(x - h)^2 + k$$

-Easiest way to graph:
- Find the vertex (h , k)
- Graph the axis of symmetry x = h
- Find points L/R of the vertex using a
- To find the y-intercept you have to plug in zero for x

-Easiest way to graph:
- Find the axis of symmetry using $x = -\frac{b}{2a}$
- Plug the x value for the axis of symmetry into the equation to find the y value of the vertex
- The y-intercept is equal to c
- If a>0, the parabola opens up
- If a<0, the parabola opens down
- Find points L/R of the vertex using a

Intercept Form

$$y = k(x - a)(x - b)$$

-Easiest way to graph:
- Find the x intercepts
- Find halfway between the x intercepts to find the axis of symmetry
- Plug in the x value of the axis of symmetry to find the vertex
- To find the y-intercept you have to plug in zero for x

- Know the vocabulary: axis of symmetry, vertex, maximum, minimum, zeros/x-intercepts/roots

- How to find the vertex, axis of symmetry, zeros/roots, and how to graph from standard form, vertex form, and intercept form

- Write the equation for the graph in vertex form, standard form, and intercept form

- Word problems (will be one of the ones we do in class)

Ways to Study:
Go over old homework
Look back at old notes
Look back at powerpoints- see www.bolusmath.weebly.com
Teach a friend/sibling/parent
Call a friend and discuss problems
Google similar problems with khan academy ("graphing quadratic functions")