Standard Form: _____

1. find the _____
   use the formula _____ to start
2. _____ what you found in #1 into the _____. The _____ are the ordered pair for the _____.
3. find the _____
   since every quadratic function is _____, the ___ _____ passes through the _____.
   The equation is x = __
   (_____).
4. find the _____.
   the _____ is whatever __ is in the function.
5. find _____ next to the _____, then _____ to give you another point.

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

1. find the vertex.
   the vertex is the ordered pair made up of (h, k)
2. find the axis of symmetry
   remember that the a.o.s passes through the vertex, so the equation would be $x = h$
3. find a point next to the a.o.s., then reflect it over the a.o.s. to give you another point.
4. find the ~~y-value~~ y-intercept by substituting 0 for x and solve for y in the function.

Intercept Form: $y = a(x-p)(x-q)$

1. find x-intercepts
   they are the ordered pairs (p, 0), (q, 0)
2. find the vertex
   find the middle of the x-intercepts by $(p+q) \div 2$. This will be the x-value of the vertex. Use that answer to plug into the function and find the corresponding y. You have found the vertex!
3. find the axis of symm ($\frac{p+q}{2}$ is the a.o.s!)
   remember that the a.o.s goes through the vertex, so the equation would be $x = h$
4. find extra points next to the a.o.s, reflect over a.o.s. to give you another point.

How to change standard form into vertex form.

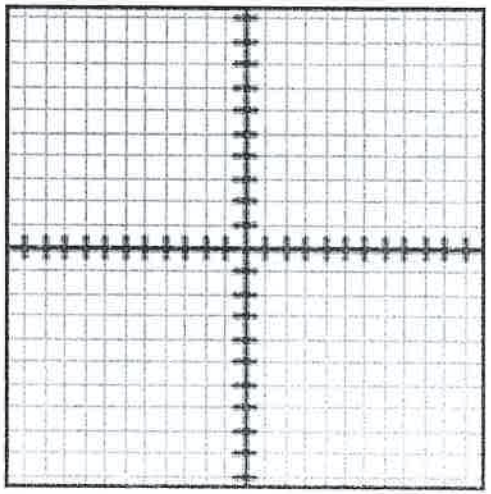
How to change vertex form into standard form.

Name:_____ Class:____ Date:_____

Algebra 2 Notes on Graphing Quadratic Functions

minimum	maximum

$y = -x^2 - 6x - 10$



$y = -3(x - 2)^2 - 4$

1 vertex: (2, -4)

2 axis of symm: x = 2

3 extra points

→ x = 1

$y = -3(1-2)^2 - 4$

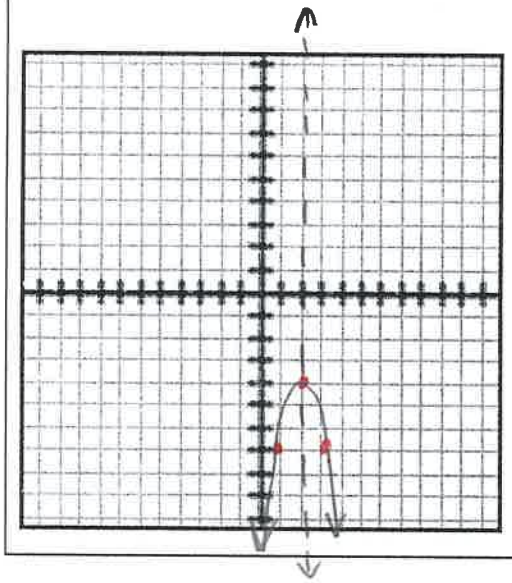
$= -3(-1)^2 - 4$

$= -3(1) - 4$

$= -3 - 4$

$= -7$

(1, -7)



$y = -1/4(x + 3)(x - 5)$ Intercept form

1 (-3, 0), (5, 0) x-int

2 vertex

$x = \frac{-3+5}{2} = \frac{2}{2} = 1$

$y = -\frac{1}{4}(1+3)(1-5)$

$= -\frac{1}{4}(4)(-4)$

$= -\frac{1}{4}(-16)$

$= 4$ (1, 4)

5 a.o.s. x = 1