5.2 – GRAPHING QUADRATIC FUNCTIONS

OBJECTIVES:
1) Graph quadratic functions using a table.
2) Graph quadratic functions using the vertex and symmetric points.
3) Given the vertex and point on the graph of a quadratic, find an additional point using symmetry.

METHOD #1: GRAPHING FROM A TABLE

We already know how to do this from chapters 1 and 2. We will have to select values of x to plug into the function, but we may have to try many values in order to get a good "u shape". Note – you can't mess this method up, unless you don't follow order of operations correctly!

1) $f(x) = -2x^2 + 2$

x	f(x)
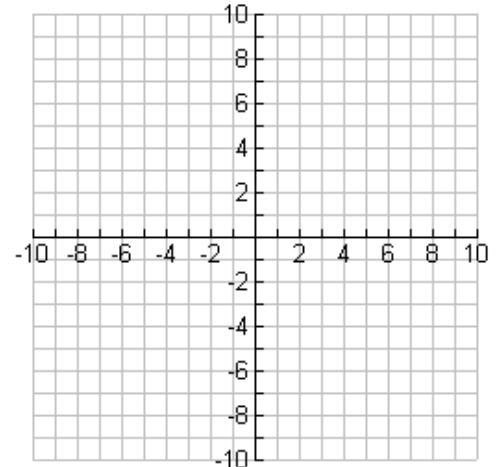
METHOD #2: FINDING VERTEX AND USING SYMMETRY

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

Opens: Axis of symmetry:
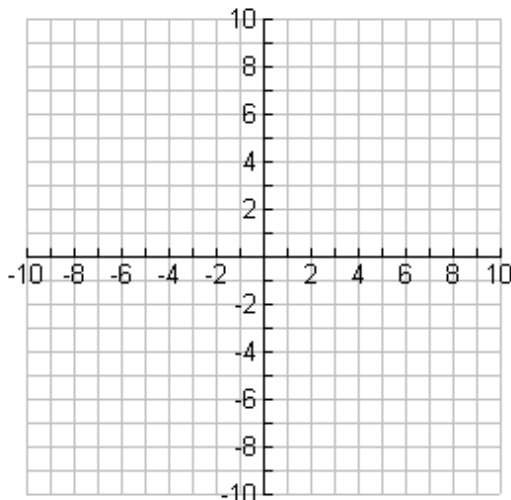
Stretch or shrink:

Vertex: y int:

                                 x int:

STANDARD FORM:
$ax^2 + bx + c = 0$

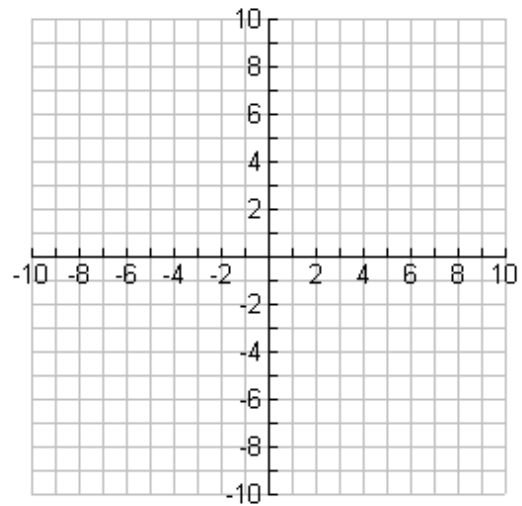OPENS UP: OPENS DOWN:

VERTEX:

AXIS OF SYMMETRY:

3) $f(x) = -2x^2 + 8x - 2$

Opens:
Stretch or shrink:

Vertex:

Axis of
Symmetry:

y int:

x int:

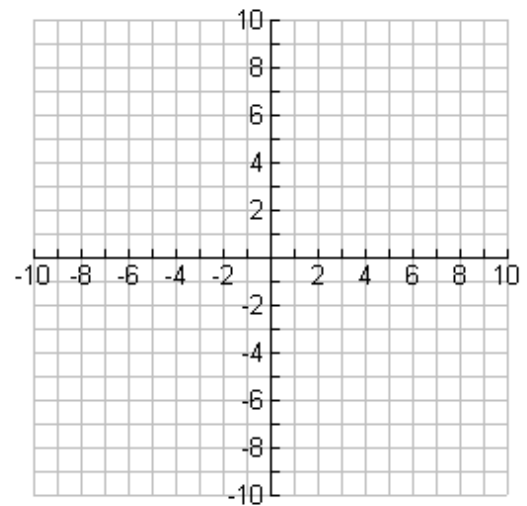## METHOD #3: USE X-INTERCEPTS AND VERTEX

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

Opens:
Stretch or shrink:

Vertex:

Axis of
Symmetry:

y int:

x int:

USING SYMMETRY TO FIND ADDITIONAL POINTS ON A PARABOLA

1) Given that the vertex of a parabola is at (100, 300) and (88, 263) lies on the parabola, find an additional point lying on the parabola. Draw a sketch!

2) Vertex: (-20, 30) point: (15, 245)

3) Vertex: (-150, -30) point: (-136, -59)

$(-150, -30)$

$(-164, -59)$

(x, y)

$(-136, -59)$