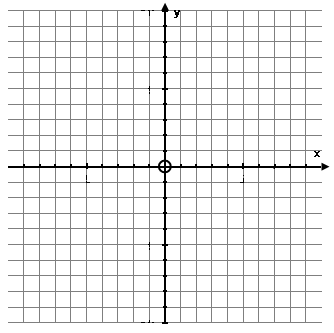
**Advanced Algebra with Trig, Glawe** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Graphing/Writing Quadratic Functions and Quadratic Inequalities Review** (4.1, 4.2, 4.9, 4.10)

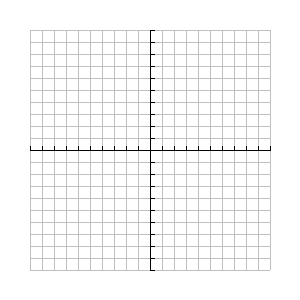
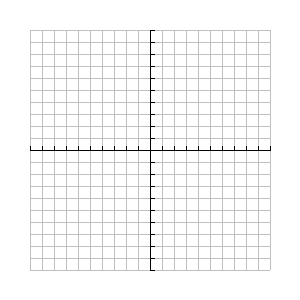
1. Graph the equation *y =* . Be sure to include the vertex, intercepts, and at least two other specific points.



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| |  |  |  | | --- | --- | --- | | x | y | (x, y) | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |

Now answer the following questions about the function:

* 1. What is the name of the graph of this function? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  2. What is the orientation (direction of opening) of the graph of this function? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  3. Does this function have a minimum or maximum value (select one)? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  4. What is the minimum or maximum value of this function? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  5. What is the y-intercept of this function? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  6. What are the coordinates of the vertex of this function? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  7. What is the equation of the axis of symmetry of this function? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  8. How many solutions/roots/zeros does this function have? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  9. What are the x-intercepts or the solutions/roots/zeros of this function? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Graph the following functions.

2. y = (x – 1)2 – 3 3. y = –(x – 1)(x + 3)

X-intercepts:

Axis of Symmetry: Axis of Symmetry:

Vertex: Vertex:

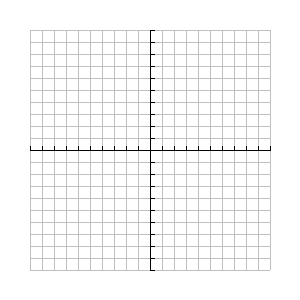
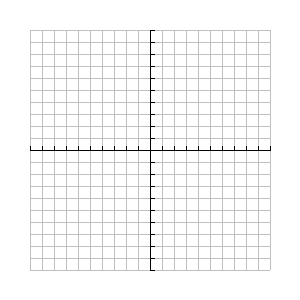
Write the following quadratic functions in standard form.

4. y = 2(x + 3)(x – 1) 5. y = (x + 4)2 – 5

Graph the following quadratic inequalities. Be sure to include the vertex, intercepts, and at least two other specific points.

6. y < -x2 + 4x + 5 7. y > x2 + 2x – 3

y < x2 + 2x + 1



Write a quadratic function whose graph has the given characteristics.

8. x-intercepts: -3, 2 and point: (3, 12) 9. vertex: (2, 7) and point: (4, 2)

10. passes through the points (5, 2), (0, 2), and (8, -6)