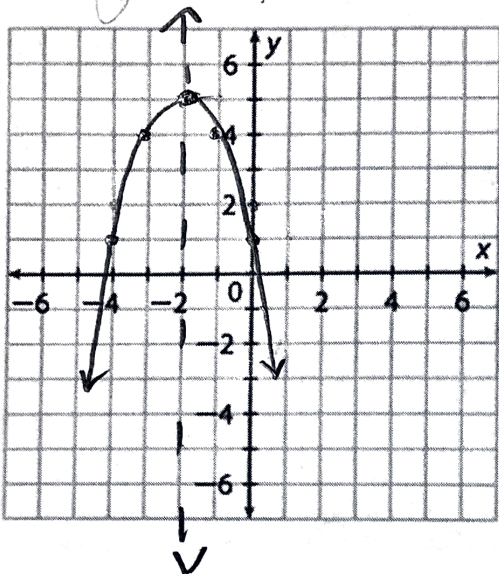


$$g(x) = -(x+2)^2 + 5$$



Axis of Symmetry is $x = -2$

Vertex: $(-2, 5)$

Opens up or down?

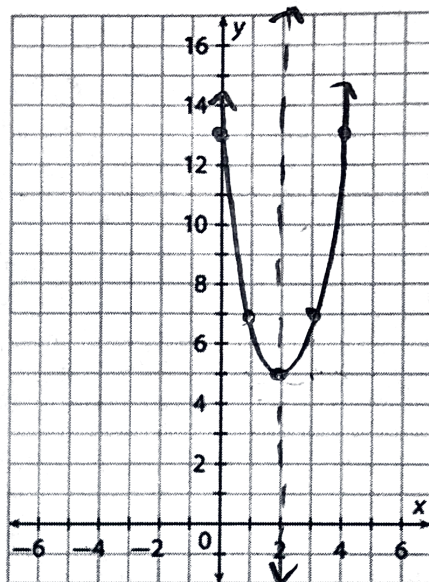
Use a to find pts 1 unit L/R of vertex at $(-1, 4)$ and $(-3, 4)$

y-intercept: $(0, 1)$

$$\neq 2$$

-2	4
-1	1
0	0
1	1
2	4

$$g(x) = 2(x-2)^2 + 5$$



Axis of Symmetry is $x = 2$

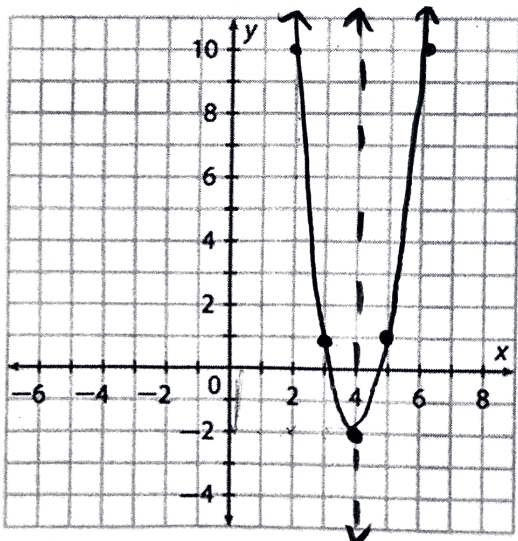
Vertex: $(2, 5)$

Opens up or down?

Use a to find pts 1 unit L/R of vertex at $(1, 7)$ and $(3, 7)$

y-intercept: $(0, 13)$

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



Axis of Symmetry is $x = 4$

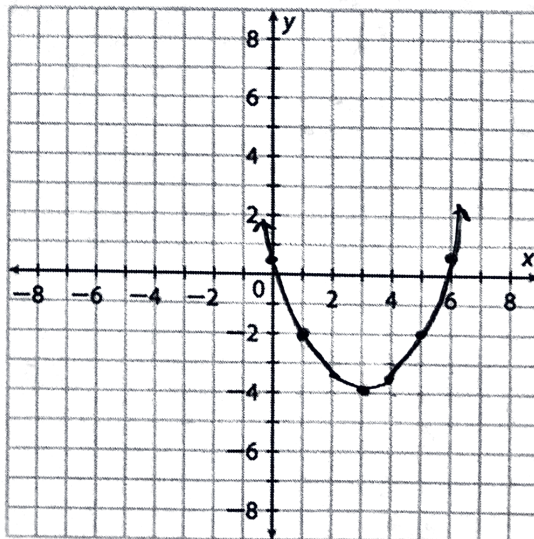
Vertex: $(4, -2)$

Opens up or down?

Use a to find pts 1 unit L/R of vertex at $(3, 1)$ and $(5, 1)$

y-intercept: $(0, 4)$

$$g(x) = \frac{1}{2}(x-3)^2 - 4$$



Axis of Symmetry is $x = 3$

Vertex: $(3, -4)$

Opens up or down?

Use a to find pts 1 unit L/R of vertex at $(2, -3.5)$ and $(4, -3.5)$

y-intercept: $(0, 0)$

Name: _____

Date: _____

Period: _____

Practice Worksheet: Graphing Quadratic Functions in Vertex Form

For #1-6, fill in the blanks. Then NEATLY sketch the graphs in pencil.

1] $y = (x - 3)^2$

Axis of Symmetry is $x =$ _____

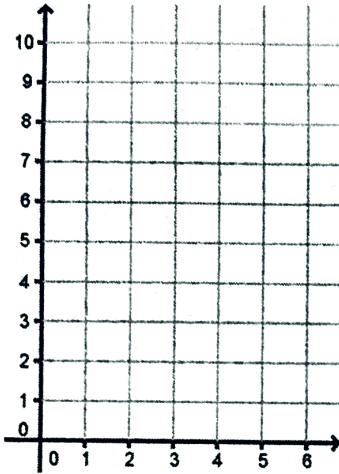
Vertex: (____, ____)

Opens up or down?

Use a to find pts 1 unit L/R of vertex at (____, ____) and (____, ____)

y-intercept: (0, ____)

extra points (1, ____) and (5, ____)



2] $y = -(x + 3)^2 + 5$

Axis of Symmetry is $x =$ _____

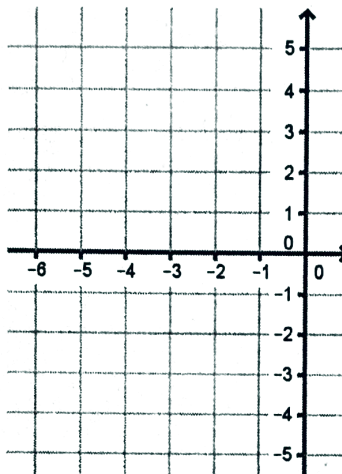
Vertex: (____, ____)

Opens up or down?

Use a to find pts 1 unit L/R of vertex at (____, ____) and (____, ____)

y-intercept: (0, ____)

extra points (-5, ____) and (-6, ____)



3] $y = 2(x + 1)^2 - 3$

Axis of Symmetry is $x =$ _____

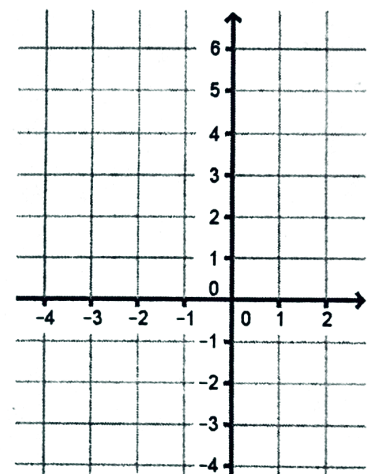
Vertex: (____, ____)

Opens up or down?

Use a to find pts 1 unit L/R of vertex at (____, ____) and (____, ____)

y-intercept: (0, ____)

extra point (-3, ____) and (1, ____)



4] $y = -\frac{3}{2}(x - 2)^2 + 6$

Axis of Symmetry is $x =$ _____

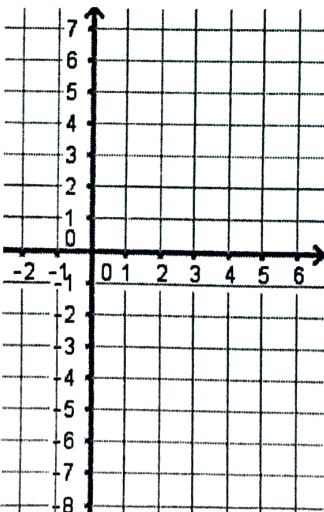
Vertex: (____, ____)

Opens up or down?

Use a to find pts 1 unit L/R of vertex at (____, ____) and (____, ____)

y-intercept: (0, ____)

extra points (-1, ____) and (4, ____)



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

Axis of Symmetry is $x =$ _____

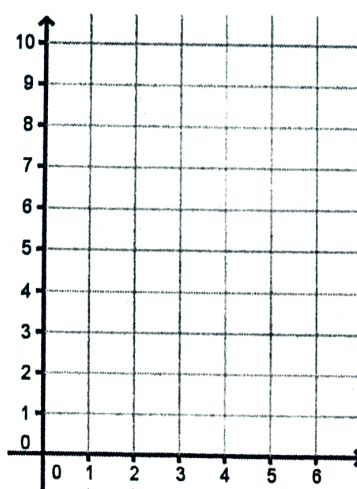
Vertex: (____, ____)

Opens up or down?

Use a to find pts 1 unit L/R of vertex at (____, ____) and (____, ____)

y-intercept: (0, ____)

extra points (1, ____) and (6, ____)



6] $y = -\frac{1}{4}(x + 2)^2 + 1$

Axis of Symmetry is $x =$ _____

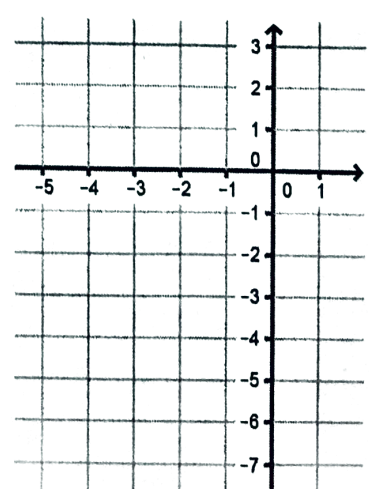
Vertex: (____, ____)

Opens up or down?

Use a to find pts 1 unit L/R of vertex at (____, ____) and (____, ____)

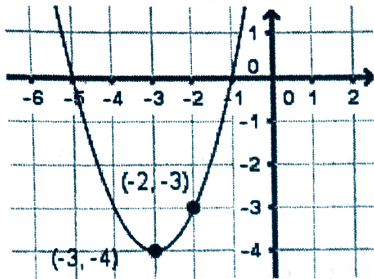
y-intercept: (0, ____)

extra points (1, ____) and (-4, ____)



Write the equation of each parabola in vertex form.

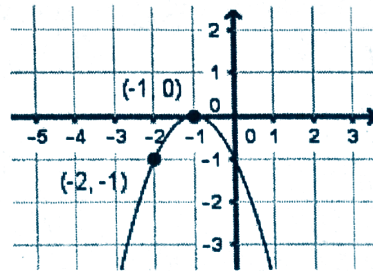
7]



Domain:

Range:

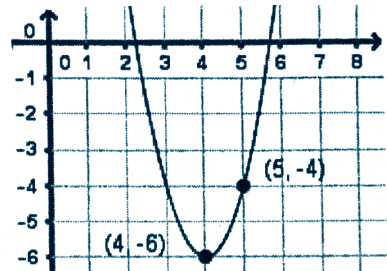
8]



Domain:

Range:

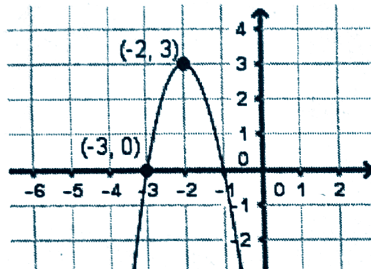
9]



Domain:

Range:

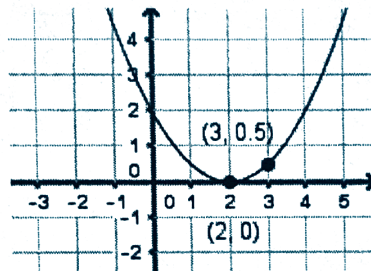
10]



Domain:

Range:

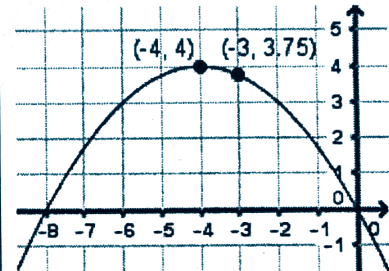
11]



Domain:

Range:

12]



Domain:

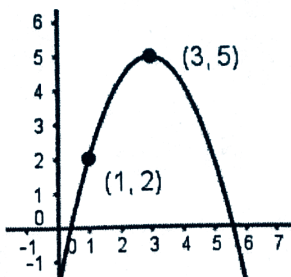
Range:

Write the quadratic function in standard form $y = ax^2 + bx + c$. Show all work.

13] $y = -(x + 2)^2$

14] $y = (x - 2)^2 + 4$

15] $y = 2(x - 3)^2 + 9$



Bonus: Write the equation in vertex form of the parabola that passes through the points shown in the graph. Show all work or explain your reasoning in detail.