Name: Date: Period:

Practice Worksheet: Graphing Quadratic Functions in Standard Form

1] For any quadratic of the form $y = ax^2 + c$, the axis of symmetry is always the line _____.

2] If the axis of symmetry of a quadratic is $x = 2$ and $(-1, 3)$ is on the graph, then the point (____, ____) must also be on the graph.

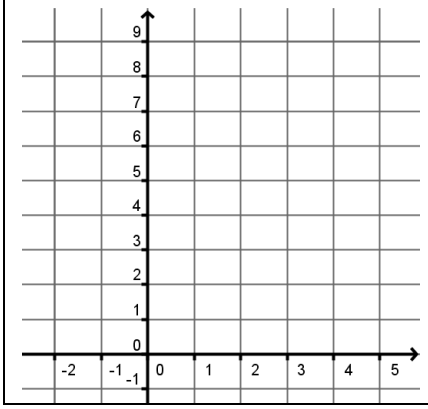
3] For any quadratic of the form $y = ax^2 + c$, the y-intercept is always the same point as the _____.

4] The graph of $y = 2x^2 + 4x + 3$ passes through the point (1, _____) and (-1, _____).

For #5-12, label the axis of symmetry, vertex, y-intercept, and at least three more points on the graph.

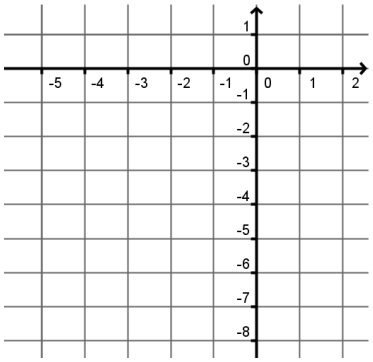
5] $y = x^2 - 4x + 8$
a = b = c =
Opens up or down?
Is vertex a max or min?
y-intercept:
Axis of Symmetry is x=_____

Vertex: (_____, _____)



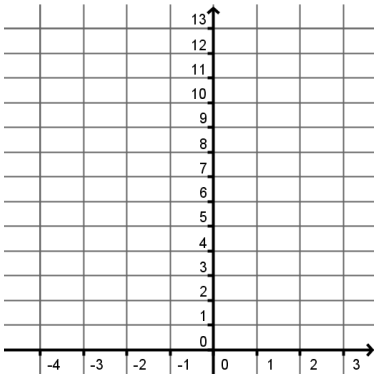
6] $y = 2x^2 + 8x$
a = b = c =
Opens up or down?
Is vertex a max or min?
y-intercept:
Axis of Symmetry is x=_____

Vertex: (_____, _____)



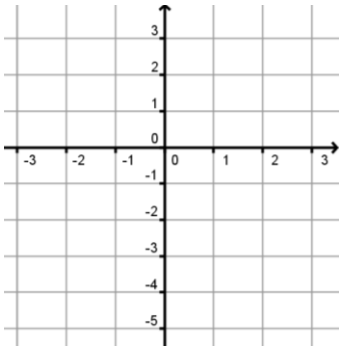
7] $y = -3x^2 - 12x + 1$
a = b = c =
Opens up or down?
Is vertex a max or min?
y-intercept:
Axis of Symmetry is x=_____

Vertex: (_____, _____)



8] $y = -\frac{3}{2}x^2 + 3$
a = b = c =
Opens up or down?
Is vertex a max or min?
y-intercept: (0, ___)
Axis of Symmetry
is x=_____

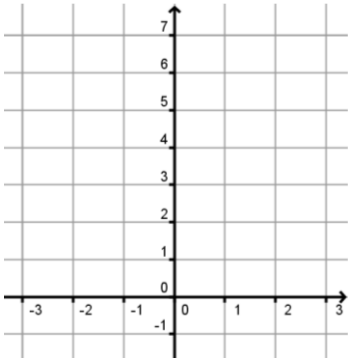
Vertex: (_____, _____)



Find the coordinates (2, _____) and (-2, _____) to guide the shape of the parabola.

9] $y = 2x^2 - 1$
a = b = c =
Opens up or down?
Is vertex a max or min?
y-intercept: (0, ___)
Axis of Symmetry
is x=_____

Vertex: (_____, _____)



Find the coordinates (2, _____) and (-2, _____) to guide the shape of the parabola.

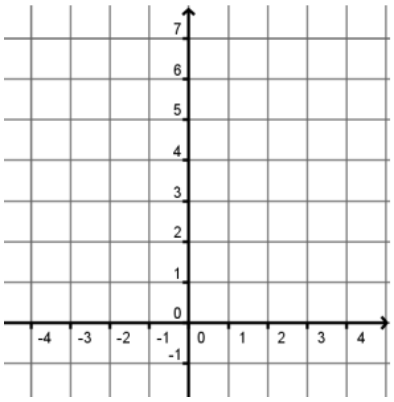
10] $y = x^2 + 4x + 3$

a = b = c =

y-intercept: (0, ____)

Axis of Symmetry is x=_____

Vertex: (_____, _____)



Find the coordinates of the points:

(-1,___), (-3, ___), and (-4,____).

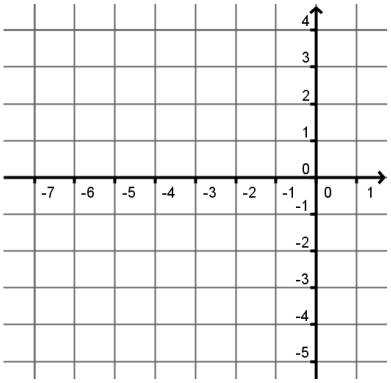
11] $y = \frac{1}{3}x^2 + 2x - 1$

a = b = c =

y-intercept: (0, ____)

Axis of Symmetry is x=_____

Vertex: (_____, _____)



Find the coordinates of the points:

(-6,___), (-4, ___), and (-2,___).

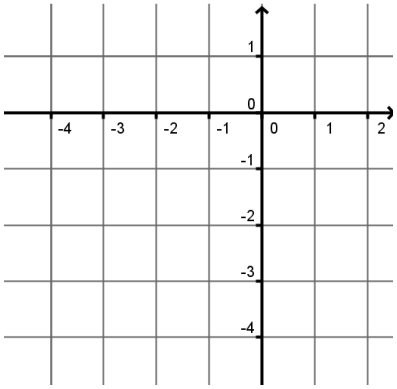
12] $y = -\frac{1}{2}x^2 - 2x - 2$

a = b = c =

y-intercept: (0, ____)

Axis of Symmetry is x=_____

Vertex: (_____, _____)



Find the coordinates of the points:

(-4,___), (-3, ___), and (-1,____).

13] A baker has modeled the monthly operating costs for making wedding cakes by the function $y = \frac{1}{2}x^2 - 12x + 150$ where y is the total cost in dollars and x is the number of cakes prepared. How many cakes should be prepared to yield the minimum operating cost?

14] The path that a motocross dirt bike rider follows during a jump is given by $y = -0.4x^2 + 4x + 10$ where x is the horizontal distance (in feet) from the edge of the ramp and y is the height (in feet). What is the maximum height of the rider during the jump?