

Features of Quadratics Review

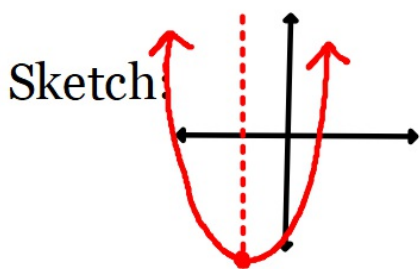
$$y = x^2 + 4x - 5 \quad a=1 \quad b=4 \quad c=-5$$

Axis of Symmetry: $x = -2$ Vertex: $(-2, -9)$

$$x = \frac{-b}{2a} = \frac{-4}{2(1)}$$

$$y = (-2)^2 + 4(-2) - 5$$
$$y = -9$$

Maximum or Minimum: min. $\rightarrow a = \text{positive!}$



Increasing Interval: $x > -2$

Decreasing Interval: $x < -2$

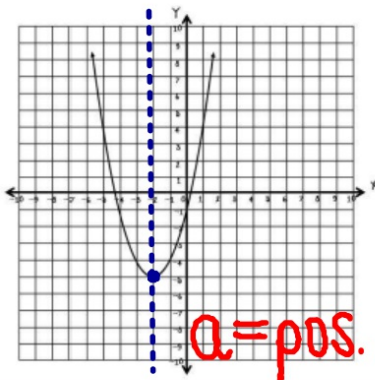
Domain: all real #s

Range: $y \geq -9$

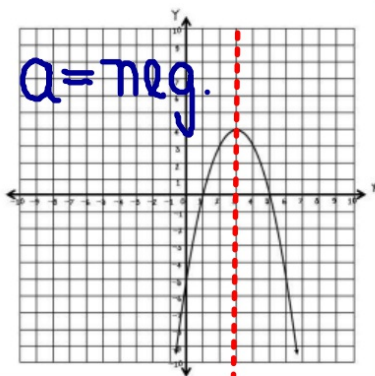
Y-Intercept: $(0, -5)$

Analyzing Quadratic Graphs

GRAPH A



GRAPH B



Answer the questions given the graphs above.

1. What is the axis of symmetry for Graph A? $x = -2$

2. What is the axis of symmetry for Graph B? $x = 3$

3. What is the vertex of Graph A? $(-2, -5)$ Maximum or Minimum? min.

4. What is the vertex of Graph B? $(3, 4)$ Maximum or Minimum? max

5. Identify the domain and range of Graph A.

$d: \text{all real \#s}$

$R: y \geq -5$

6. Identify the domain and range of Graph B.

$d: \text{all real \#s}$

$R: y \leq 4$

7. Identify the equation for Graph A:

A. $y = x^2 - 4x - 1$

~~C. $y = x^2 - 4x - 1$~~

B. $y = x^2 + 4x - 1$

~~D. $y = x^2 + 4x - 1$~~

$x = \frac{4}{2(1)} = 2$

8. Identify the equation for Graph B:

~~A. $y = x^2 - 6x - 5$~~

C. $y = -x^2 - 6x - 5$

~~B. $y = x^2 + 6x - 5$~~

D. $y = -x^2 + 6x - 5$

$x = \frac{6}{2(-1)} = -3$

Topic: **Identifying Quadratics Roots**

Date: _____

Main Ideas/Questions	Notes
Definition	the locations where the graph crosses the x-axis.
Also called...	<u> x-intercepts </u> , <u> solutions </u> , <u> zeroes </u>
Number of Solutions	<p>2 SOLUTIONS 1 SOLUTION NO SOLUTION</p> 