

Starter

18 Jan 2018

State the vertex, and if the quadratic opens up or down.

$(0, 4)$

1)  $y = -3x^2 + 4$

DOWN

$1.46 \times 10^{-6}$   
 $1.46 \text{ E } -6$

2)  $y = 2x^2 - 6$

UP

$(0, -6)$

$0.00000146$   
 $0.00000146$

Quadratics Graphing Calculator Notes

Given  $y = -x^2 + 4x + 5$

Axis of symmetry  
 X = \_\_\_\_\_

Domain: \_\_\_\_\_

Range: \_\_\_\_\_

**y-intercept**  
 $(0, 5)$

**Vertex**  
 (Maximum/Minimum points)  
 Left bound  
 Right bound  
 (\_\_\_\_, \_\_\_\_ ) Vertex

**Zeros/x-intercepts**  
 Left bound  
 Right bound  
 Repeat for other zero  
 (\_\_\_\_, 0) &  
 (\_\_\_\_, 0)

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  $x = 0$ . Missing

2] If the axis of symmetry of a quadratic is  $x = 2$  and  $(-1, 3)$  is on the graph, then the point  $(5, 3)$  must also be on the graph. 5, 3

3] For any quadratic of the form  $y = ax^2 + c$ , the y-intercept is always the same point as the  $(0, c)$ .

4] The graph of  $y = 2x^2 + 4x + 3$  passes through the point  $(1, 9)$  and  $(-1, 1)$ .

$y = ax^2 + bx + c$

5]  $y = x^2 - 4x + 8$   
 $a = 1$   $b = -4$   $c = 8$

Opens up or down? up

Is vertex a max or min? min

y-intercept: (0, 8)

Axis of Symmetry is  $x = 2$

Vertex: 2, 4

$6x^2 - 2x^2$        $0x$

$8$        $0$

Vertex: (\_\_\_\_, \_\_\_\_)

The image shows a worksheet for a quadratic function. At the top, the equation  $6x^2 - 2x^2$  is written, with a red circle around the coefficient 6. To its right, the coefficient of the linear term is given as  $0x$ , with a red circle around the 0. Below this, the vertex form is indicated as  $8$  and  $0$ , with red circles around both. The vertex form is  $y = a(x-h)^2 + k$ , so the vertex is  $(-1, 8)$ . The text "Vertex: (\_\_\_\_, \_\_\_\_)" is provided for the student to write the coordinates. Below the text is a coordinate plane. The x-axis is labeled from -5 to 0, and the y-axis is labeled from -8 to 1. A vertical blue line is drawn at  $x = -1$ . To the left of the main grid, there is a smaller coordinate system with x-axis from 1 to 2.