

Sept. 18 2.1 Graphs of Quadratic functions Day 1

Graph each of the following equations on your calculator and make a sketch of the graph beside the equation

Quadratic Functions

$$y = x^2 - 3$$

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

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

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

Non-Quadratic Functions

$$y = x - 3$$


$$y = x^3 - 2x^2$$

$$y = 8/x$$

$$y = 2x - 4$$

Compare and Contrast

Complete the following table by looking at the equations and the graphs of the quadratic and non-quadratic equations

Quadratic equations and graphs differences	Similarities	Non-Quadratic equations and graphs differences
<p>- all have parabola.</p>  <p>- all eqns exponent of 2.</p>	<p>- all eqns have variable x</p> <p>- all graphs have + and - values.</p>	<p>- None were parabolas.</p>

Quadratic function: Has an equation that can be written in the form:

$$y = ax^2 + bx + c \text{ OR } f(x) = ax^2 + bx + c$$

a, b and c are constant values and "a" cannot be 0.

The graph of a quadratic function is a curve called aparabola. That either opens upward or downward.

Label the following on the graph

x-intercepts $(1, 0)$
 $(5, 0)$

y-intercept $(0, 5)$

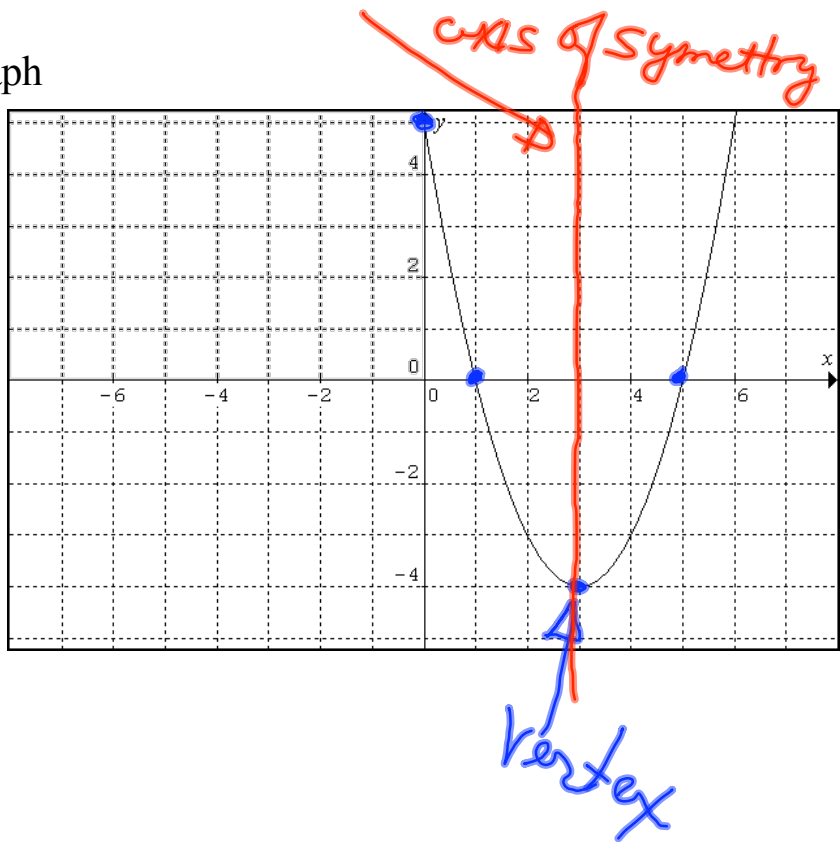
vertex $(3, -4)$

axis of symmetry

Domain $x = 3$

Range $x \in \mathbb{R}$

$y \geq -4$



Graph $y = x^2 + 4x + 3$ and identify the following

x - intercepts (zero) $(-3, 0)$

y - intercept $(0, 3)$

vertex $(-2, -1)$

axis of symmetry $x = -2$

Domain $x \in \mathbb{R}$

Range $y \geq -1$

Graph $y = -2x^2 + 6x + 5$ and identify the following

x - intercepts $(-0.68, 0)$ $(3.68, 0)$

y - intercept $(0, 5)$

vertex $(1.5, 9.5)$

axis of symmetry

Domain $x = 1.5$

$x \in \mathbb{R}$

Range $y \leq 9.5$

Pg. 94
1, 2
6-8