

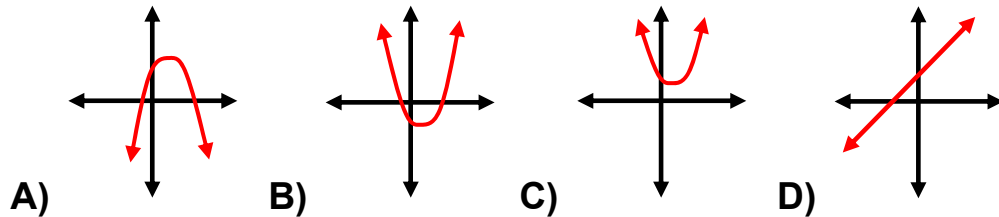



Objective: Properties of Quads Part 1- Axis of Symmetry and Vertex

Homework QF-6 – NYA p.560 #1 – 10

Do Now: Solve 1. $2x^2 + x - 15 = 0$ 2. $x^2 = 50$

Exam Prep: Which of the following quadratic equations could be $-3x^2 + 5x + 10$?





Let us begin the journey into graphing quadratic functions. You need only your imagination and a TI graphing calculator.

Definitions and Information

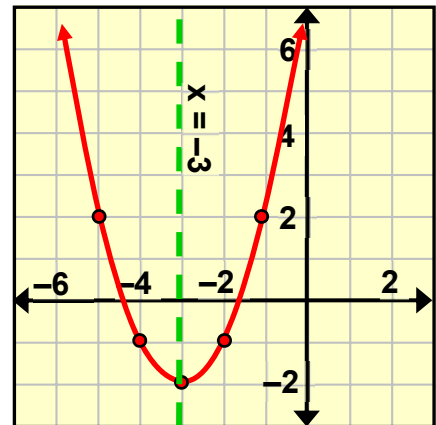
Standard Form	$y = ax^2 + bx + c$
Parent Function	$y = x^2$
Name of U-Shaped Curve	Parabola
***Line that Splits Parabola Half ***	Axis of Symmetry
Highest or Lowest Point	Vertex
$a > 0$, Upward Facing Curve	Low Point is Minimum
$a < 0$, Downward Facing Curve	High Point is Maximum

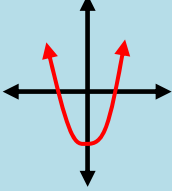
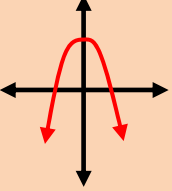
Axis of Symmetry

$x = \frac{-b}{2a}$ Why is it "x =" and not "y =" ?

Practice

1. $y = x^2 + 6x + 7$	4. $y = -2x^2 + 4x + 7$
2. $y = 4x^2 + 5$	5. $y = 6x^2 + 3x + 10$
3. $y = -3x^2 - 5x + 1$	6. $y = -x^2 - 10x - 37$



<u>Vertex</u> Substitute the x-value from the axis of symmetry into the equation to get the y-value of the coordinate.	a > 0 (positive)	a < 0 (negative)
	curve up	curve down
	vertex is minimum	vertex is maximum
		

Practice

1. $y = x^2 + 8x + 2$	2. $y = -2x^2 + 1$	3. $y = -x^2 - 2x + 10$
4. $y = 4x^2 - 4x + 16$	5. $y = 10x^2 + 5x$	6. $y = -3x^2 + 7x - 12$