

Moving from Vertex Form to Standard Form

Vertex Form: _____

Standard Form: _____

As you saw in the sorting activity, both forms can be very useful. Which form is most useful to identify the following features?

The vertex

The y-intercept

Direction/width

Today we will be converting equations from vertex form to standard form. This is really just using skills you already have!

Review:

1. Multiply $(x - 2)^2$

2. Simplify: $(x - 5)^2 + 7$

3. Simplify: $4(x + 3)^2$

These are the only skills you'll need for moving a quadratic function from vertex to standard form.

For each of the following, write in standard form and identify the important features.

4. $f(x) = (x - 3)^2 + 5$

Vertex (_____, _____)

y-intercept: _____

Upward or Downward facing?

Axis of Symmetry:

5. $f(x) = 3(x - 9)^2 + 10$

Vertex (_____, _____)

y-intercept: _____

Upward or Downward facing?

Axis of Symmetry:

6. $f(x) = -(x + 4)^2 - 3$

Vertex (_____, _____)

y-intercept: _____

Upward or Downward facing?

Axis of Symmetry

You Try!

Match groups of 6:

Vertex Form Standard Form Vertex y-intercept Axis of Symmetry Graph

Vertex Form

Equation A: $y = (x - 6)^2 + 8$	Equation B: $y = 2(x - 1)^2 - 3$
Equation C: $y = -(x + 5)^2 + 12$	Equation D: $y = 2(x + 4)^2 - 6$

Standard Form

$y = 2x^2 + 16x + 26$	$y = -x^2 - 10x - 13$
$y = 2x^2 - 4x - 1$	$y = x^2 - 12x + 44$

Vertex

(1, -3)	(-5, 12)
(6, 8)	(-4, -6)

y-intercept

26	-1
-13	44

Axis of Symmetry

$x = -5$	$x = -4$
$x = 6$	$x = 1$

Graphs



