Inspiring Greatness

INDEPENDENCE SCHOOL DISTRICT

Math Virtual Learning

Algebra 1 S2

May 5th, 2020

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Lesson: May 5th, 2020

Learning Target:

- **Students will be continue to use vertex form and identify translations, reflection, and scale changes.**

Warm-Up

1. Write the equation of the parabola in vertex form.

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

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

Warm-Up

1. Write the equation of the parabola in vertex form.

- ~~$y = (x + 1)^2 + 3$~~
- $y = (x + 1)^2 - 3$
- $y = (x - 1)^2 - 3$
- ~~$y = (x - 1)^2 + 3$~~

Use multiple choice to your advantage and mark off bad answers. A and D are bad because they have y = +3

Reminder to find Vertex from Standard form:
Find X = -b/2a, then plug in x to find y

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

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

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

$$y = -3$$

Vertex (-1, -3)

A = 1

Warm-Up

2. Rewrite $y = x^2 + 4x + 5$ in vertex form. Then find the vertex.

- $y = (x - 2)^2 + 9$; $(2, -9)$
- $y = (x - 2)^2 - 21$; $(2, 21)$
- $y = (x + 2)^2 + 9$; $(-2, 9)$
- $y = (x + 2)^2 + 1$; $(-2, 1)$

Warm-Up

2. Rewrite $y = x^2 + 4x + 5$ in vertex form. Then find the vertex.

- ~~$y = (x - 2)^2 + 9; (2, -9)$~~
- ~~$y = (x - 2)^2 - 21; (2, 21)$~~
- $y = (x + 2)^2 + 9; (-2, 9)$
- $y = (x + 2)^2 + 1; (-2, 1)$

A and B are bad choices after you solve for the x of the vertex because you found x = -2.

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

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

$y = 1$

Vertex (-2, 1)

A = 1

Warm-Up

3. Write $y = -4x^2 - 64x - 265$ in vertex form.

- $y = -4(x + 8)^2 - 9$
- $y = -4(x - 8)^2 + 9$
- $y = -4(x - 8)^2 - 9$
- $y = -4(x + 8)^2 + 9$

Warm-Up

3. Write $y = -4x^2 - 64x - 265$ in vertex form.

- $y = -4(x + 8)^2 - 9$
- ~~$y = -4(x - 8)^2 + 9$~~
- $y = -4(x - 8)^2 - 9$
- ~~$y = -4(x + 8)^2 + 9$~~

B and D are bad choices because they have y = +9

$x = \frac{64}{2(-4)}$ $x = \frac{64}{-8}$ $x = -8$

$y = -4(-8)^2 - 64(-8) - 265$

$y = -9$

Vertex (-8, -9)

A = -4

Warm-Up

4. Write $y = -3x^2 + 12x - 21$ in vertex form.

- $y = -3(x - 2)^2 - 9$
- $y = -3(x + 2)^2 - 9$
- $y = -3(x + 2)^2 + 9$
- $y = -3(x - 2)^2 + 9$

Warm-Up

4. Write $y = -3x^2 + 12x - 21$ in vertex form.

- $y = -3(x - 2)^2 - 9$
- $y = -3(x + 2)^2 - 9$
- ~~$y = -3(x + 2)^2 + 9$~~
- ~~$y = -3(x - 2)^2 + 9$~~

C and D are bad choices because they have y = +9

$x = \frac{-12}{2(-3)}$ $x = \frac{-12}{-6}$ $x = 2$

$y = -3(2)^2 + 12(2) - 21$

$y = -9$

Vertex (2, -9)

A = -3

Today's Lesson

In today's lesson we will continue to use vertex form and identify translations, reflection, and scale changes.

Here is the Video from the last lesson if you need to refresh yourself with some guided practice.

Independent Practice

Complete the Vertex Form Worksheet and then check your work with the Key.

Additional Practice:

Click on the links below to get additional practice and to check your understanding!

Click here to practice transformations on quadratics.

Click here for a quadratics review quiz.