Date: _____

Learning Goal

Desmos

Open Desmos and graph each of the equations given below.

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

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

How are the graphs the same?

How are the graphs different?

Desmos

Open Desmos and graph each of the equations given below.

$$y = (x + 3)(x - 3)$$

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

How are the graphs the same?

How are the graphs different?

Desmos

Open Desmos and graph each of the equations given below.

$$y = (x + 5)^2$$

$$y = (x - 4)^2$$

How are the graphs the same?

How are the graphs different?

Desmos

Open Desmos and graph the equation below.

$$y = (x - r)(x - s)$$

Turn on sliders for r and s.

Play with the sliders.

What do the values of r and s represent?

What are my zeros / x-intercepts?

$y = (x + 6)(x - 2)$

$y = (x + 4)(x + 2)$

$y = (x - 5)(x - 1)$

What are my zeros / x-intercepts?

$y = 2(x + 6)(x - 2)$

$y = 0.5(x + 4)(x + 2)$

$y = -2(x - 5)(x - 1)$

What is my y-intercept?

$y = (x + 6)(x - 2)$

$y = (x + 4)(x + 2)$

$y = (x - 5)(x - 1)$

What is my y-intercept?

$y = 2(x + 6)(x - 2)$

$y = 0.5(x + 4)(x + 2)$

$y = -2(x - 5)(x - 1)$

What is my vertex?

$y = (x + 6)(x - 2)$

$y = 2(x + 6)(x - 2)$

What is my vertex?

$y = (x - 5)(x - 1)$

$y = -2(x - 5)(x - 1)$

Graph Me!

To graph a parabola in factored form:

$$y = a(x - r)(x - s)$$

1. Plot the zeros / x-intercepts.

They are _____ and _____.

2. Plot the y-intercept.

It is _____ x _____ x _____!

***Or expand to standard form (c-value)**

3. Plot the vertex.

The x-value of the vertex is _____ way between the zeros.

Find the y-value by

Graph Me!

Determine the zeros, y-intercept and vertex of the parabola defined by the equation
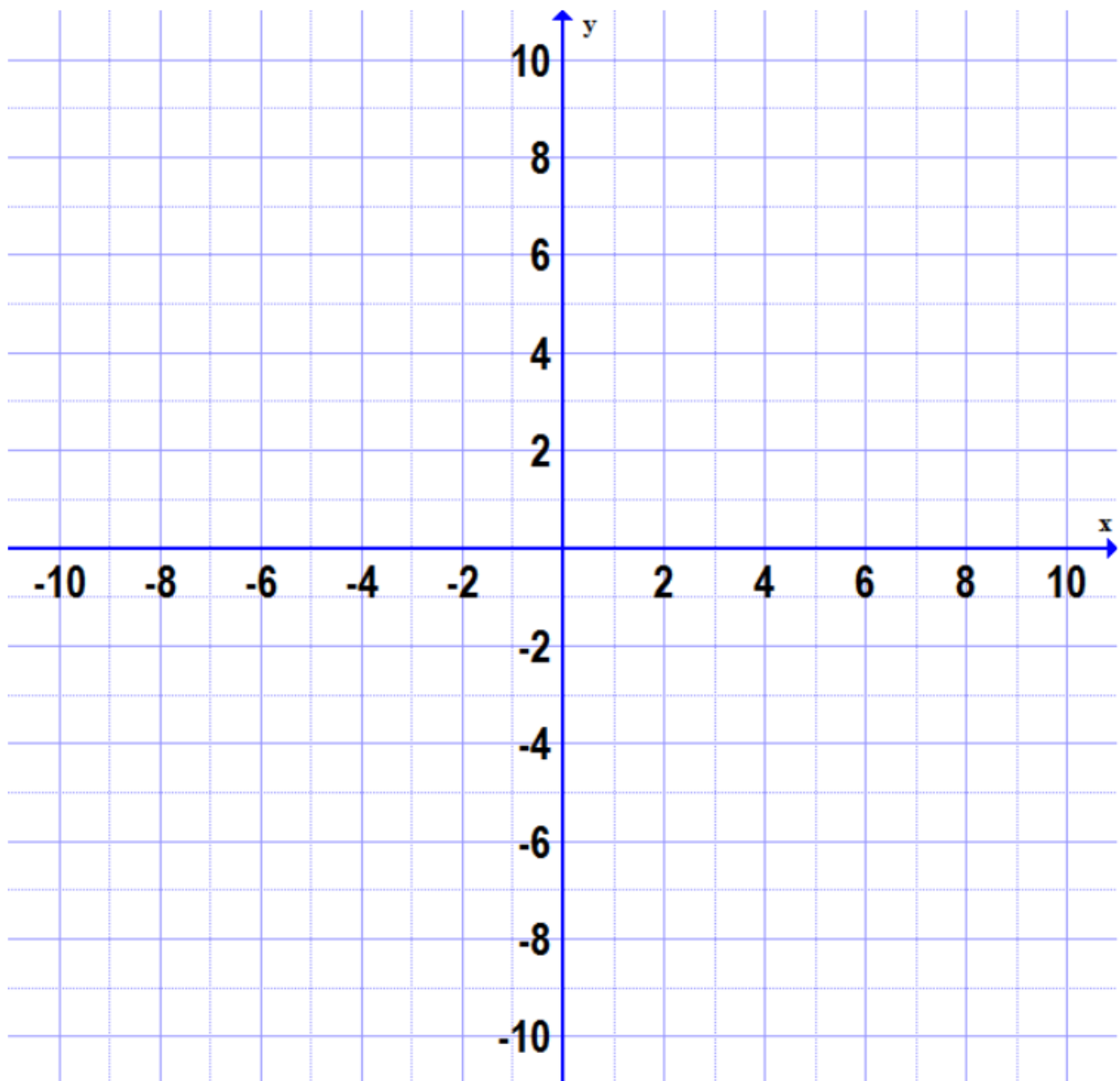
$$y = (x + 2)(x - 4)$$

Zeros:

y-Intercept:

vertex:

Graph Me!

Graph it!

$$y = (x + 2)(x - 4)$$

Graph Me!

Determine the zeros, y-intercept and vertex of the parabola defined by the equation
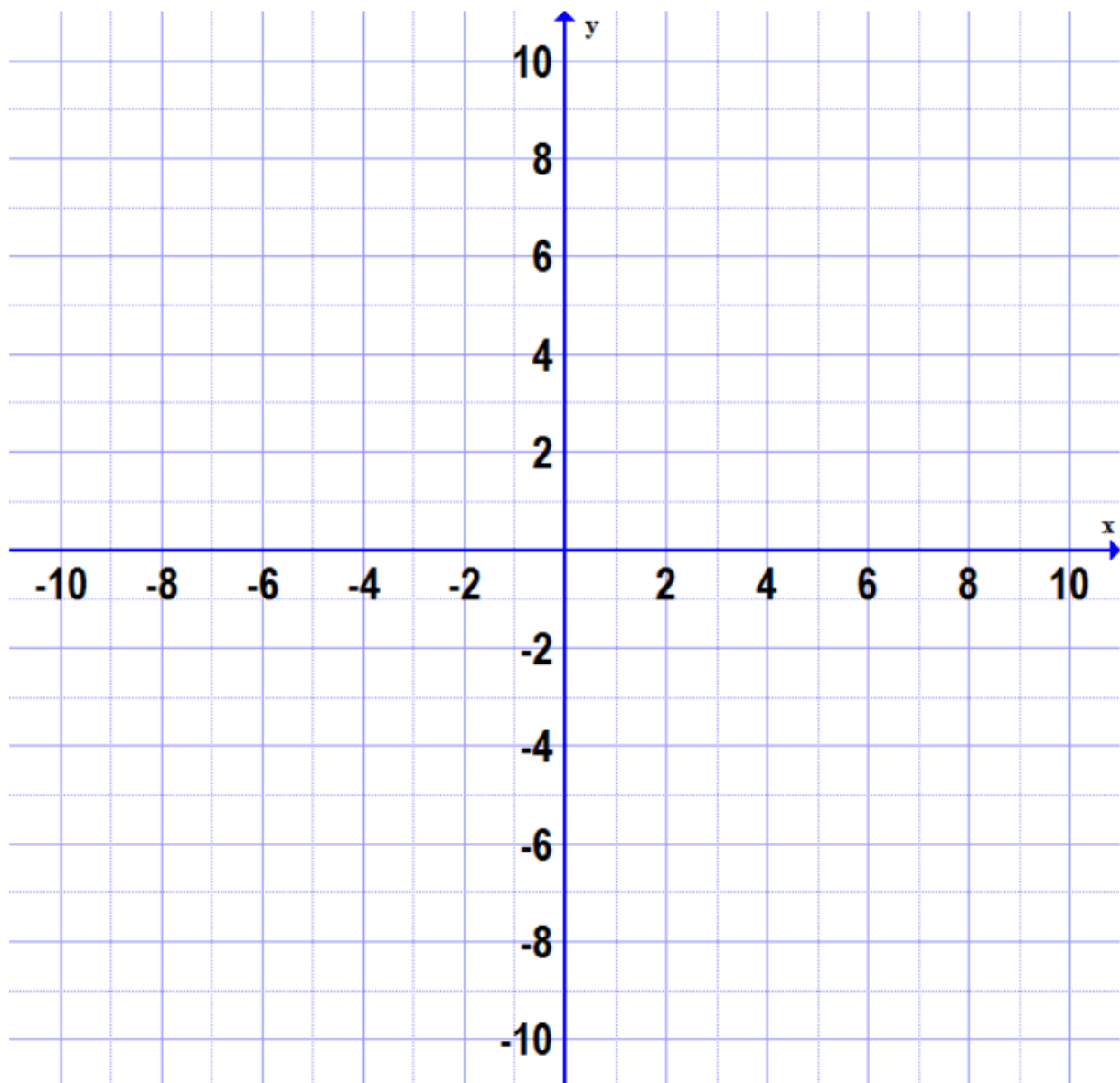
$$y = (x - 1)(x - 5)$$

Zeros:

y-Intercept:

vertex:

Graph Me!

Graph it!

$$y = (x - 1)(x - 5)$$

Graph Me!

Determine the zeros, y-intercept and vertex of the parabola defined by the equation
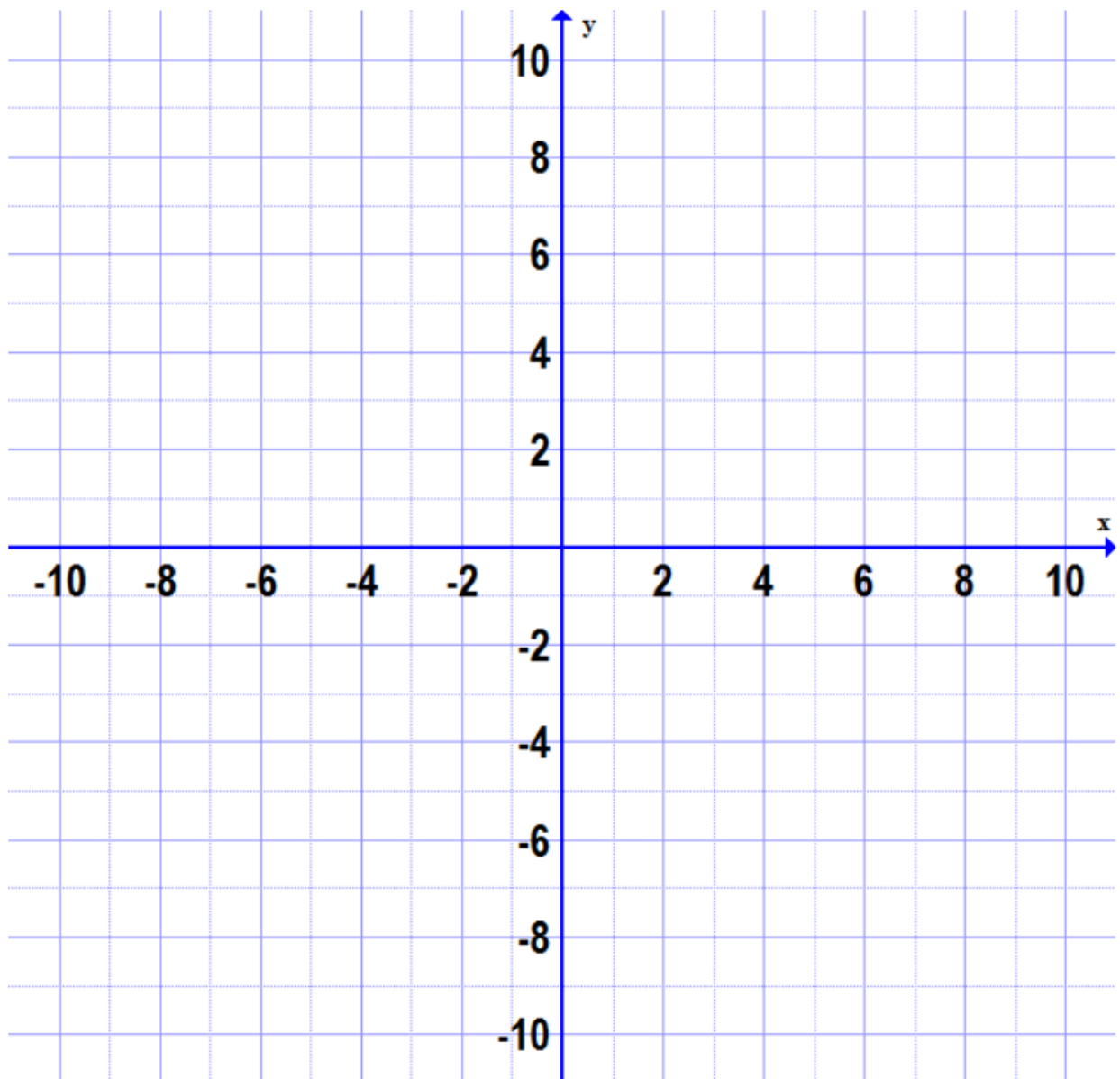
$$y = 2(x + 4)(x + 1)$$

Zeros:

y-Intercept:

vertex:

Graph Me!

Graph it!

$$y = 2(x + 4)(x + 1)$$

Graph Me!

Determine the zeros, y-intercept and vertex of the parabola defined by the equation

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

Zeros:

y-Intercept:

vertex:

Graph Me!

Graph it!

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