

Algebra 2 Adapted Assignment

Weeks of April 20-May 1

Lesson Title: How to find y intercept of quadratics

Let's Review: Last week, we learned about the a part of a quadratic equation.

Let's look at only the a part of the equation:

$$ax^2 + bx + c = 0$$

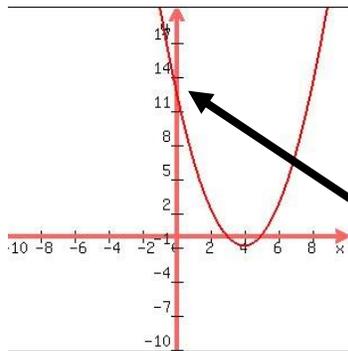
- Larger values of **a** squash the curve inwards
- Smaller values of **a** expand it outwards
- And negative values of **a** flip it upside down

You can use that a part to determine what the graph of the quadratic will look like (will it be curved up or down, will it be skinny or wide).

Now, we are going to look at the c part of the quadratic.

The c part is known as the y-intercept.

What is the meaning of y-intercept? y-intercept is the point where graph crosses the y-axis which means x-value at that point is equal to 0.



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

Remember: replace the numbers in front of each term with a, b, and c:

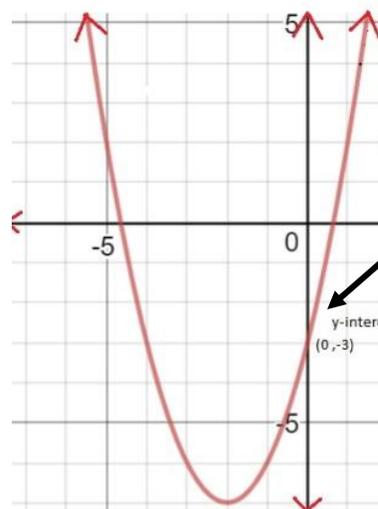
$$y = 1x^2 + 4x - 3$$

$$a = 1, b = 4, c = -3$$

Look at the term labeled c. C's value is -3

This means that the y-intercept will be -3. The coordinate is (0,-3)

The graph for $y = x^2 + 4x - 3$ looks like this:



From the equation, $y = x^2 + 4x - 3$, we can tell that the parabola will open up (a), it will be a little wide (positive whole number for a), and that the y-intercept will be -3 (number in the place of c) and the y-intercept coordinates will be (0, -3).

For the equations listed below, identify the y-intercept and the coordinate for the y-intercept.

Ex: $y = 2x^2 + 14x + 24$

y-intercept: 24

Coordinate: (0, 24)

1. $y = 4x^2 + 20x + 9$ y-intercept: _____ Coordinates: (__, __)

2. $y = -2x^2 - 11x + 40$ y-intercept: _____ Coordinates: (__, __)

3. $y = 3x^2 - 5x + 2$ y-intercept: _____ Coordinates: (__, __)

4. $y = x^2 + 10x + 16$ y-intercept: _____ Coordinates: (__, __)

5. $y = 3x^2 - 22x - 16$ y-intercept: _____ Coordinates: (__, __)

6. $y = 2x^2 + 13x + 18$ y-intercept: _____ Coordinates: (__, __)

7. $y = 4x^2 + 31x - 45$ y-intercept: _____ Coordinates: (__, __)

8. $y = 2x^2 - 25x + 63$ y-intercept: _____ Coordinates: (__, __)

9. $y = x^2 - 2x + 1$ y-intercept: _____ Coordinates: (__, __)

10. $y = -3x^2 + 11x + 42$ y-intercept: _____ Coordinates: (__, __)

For the equations below, answer the questions about a and c.

$y = -2x^2 + 11x - 14$

What number is in for a:

Circle your answers below

Positive/Negative

Opens Up or Down

Skinny or Wide

What number is in for c:

What is the y-intercept? __

Coordinates for the y-intercept: (__, __)