Math 3 Unit 3 Day 4 – Factoring Using Square Root Method & Quadratic Formula

What is a quadratic equation?

When a problem asks you to find the roots or zeros of an equation, they want you to find the x-values that you could plug into the equation and get 0. On the graph, these are the _____.

There are many ways to find the roots, zeros, or solutions.

Method 1: **SOLVE** by factoring.

1. $x^2 - x - 6 = 0$

2. $x^2 - 3x = 40$

3. $2x^2 + 15x - 8 = 0$

Method 2: When you do not have a "b" term, you can just solve for x!

4. $x^2 - 16 = 0$

5. $x^2 + 6 = 0$

6. $2x^2 - 36 = 0$

7. $x^2 + 72 = 0$

Method 3: Quadratic Formula

This method is good when you need an _____ solution, but cannot _____.

$ax^2 + bx + c = 0$

Find $a, b,$ and c

Example: $x^2 - x - 5 = 0$

$a =$

$b =$

$c =$

Step 1: Plug into the quadratic formula

$$\frac{-\_\_ \pm \sqrt{\_\_^2 - 4 \cdot a \cdot \_\_}}{2 \cdot \_\_}$$

$$\frac{-\_\_ \pm \sqrt{\_\_^2 - 4 \cdot \_\_ \cdot \_\_}}{2 \cdot \_\_}$$

Solve using the quadratic formula:

7. $5m^2 + 7m = -3$

8. $4x^2 - 8x + 13 = 0$