Math 1 **8.8 Solving Quadratics by Graphing** Unit 8

*SWBAT solve quadratic equations by graphing and using square roots.*

Roots! Solutions! X-Intercepts! Zeros!

They all mean the same thing! What is the value of x when y is zero?!

** Two Solutions One Solution No Solution**

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**Steps to Solve for “X” by Graphing**

Step 1: Set the equation equal to zero.

Step 2: Put the left side of the equation into Y1 =

Step 3: Put the right side of the equation into Y2 =

Step 4: Hit “GRAPH”

Step 5: 2nd 🡪 TRACE 🡪 Intersect 🡪 Enter 3 times

Step 6: Focus on the value of “x” (that’s what we are solving for!)

Step 7: Repeat steps 5 and 6 until you have found the value for all x-intercepts

**Example 1:** What are the solutions of each equation? Solve by graphing.

1. x2 = 1
2. x2 = 4x + 5
3. x2 – 6x = 9
4. x2 = –5

**Solving Using Square Roots**

Step 1: Make sure you have a binomial in the form y = ax2 + c

Step 2: Get the variable by itself.

Step 3: How do you get rid of a square? Square root it!

*\*\*If you get an error message – it means we have No Solution\*\**

Step 4: Remember – square roots always have **two** solutions (positive and negative)

**Example 2:** What are the solutions of each equation? Solve by taking square roots.

1. 3x2 – 75 = 0
2. m2 – 36 = 0
3. 3x2 + 15 = 0
4. 4d2 + 16 = 16