

THE QUADRATIC FORMULA

Guided Notes

ESSENTIAL QUESTION

How do I solve quadratic equations using the quadratic formula? What is the discriminant?

THE QUADRATIC FORMULA

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

- The quadratic formula is a method that can be used to solve _____ quadratic equation by following the steps below:
 - Rearrange the equation so that it is set equal to _____ and written in _____ ($ax^2 + bx + c = 0$).
 - Identify a, b, c and _____ into the quadratic formula.
 - _____ the expression by finding the two cases ($\pm$) to solve for x.

1. Solve using the quadratic formula.
 $x^2 - 5x - 36 = 0$

2. Solve using the quadratic formula.
 $2x^2 - 5 = -9x$

3. Solve using the quadratic formula.
 $-x^2 - 2x + 7 = 0$

4. Solve using the quadratic formula.
 $x^2 - 8x = -16$

THE DISCRIMINANT

$$d = b^2 - 4ac$$

- The discriminant can be used to determine the number of _____ a quadratic equation has.
 - If $d > 0$, there are _____ solutions.
 - If $d = 0$, there is _____ solution.
 - If $d < 0$, there are _____ solutions.

5. Find the discriminant & how many solutions the quadratic equation has.
 $y = x^2 + 5x + 4$

6. Find the discriminant & how many solutions the quadratic equation has.
 $y = 4x^2 - 12x + 9$

7. Find the discriminant & how many solutions the quadratic equation has.
 $y = -3x^2 + 5x - 8$