

# Quadratic Formula Notes

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# Cornell Notes

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Topic Quadratic Formula

Class/Subject Algebra

Essential Question:

Quadratic Formula

Steps:

What is the quadratic formula, and what is it used for?

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

ex) Solve:  $0 = 2x^2 - 4x - 5$

① Identify a, b, c

$$a = 2$$

$$b = -4$$

$$c = -5$$

② substitute

$$X = \frac{-(-4) \pm \sqrt{(-4)^2 - 4(2)(-5)}}{2(2)}$$

③ simplify

$$X = \frac{4 \pm \sqrt{16 + 40}}{4}$$

$$X = \frac{4 \pm \sqrt{56}}{4}$$

④ split up the problem

$$X = \frac{4 + 7.48}{4} \text{ or } X = \frac{4 - 7.48}{4}$$

$$X = 2.87 \text{ or } X = -0.87$$

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Topic Quadratic Formula (cont.)

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Example :

Solve using the quadratic formula

$$0 = -x^2 + 6x - 2$$

$$a = -1$$

$$b = 6 \quad X = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$c = -2$$

$$X = \frac{-(6) \pm \sqrt{(6)^2 - 4(-1)(-2)}}{2(-1)}$$

$$X = \frac{-6 \pm \sqrt{36 - 8}}{-2}$$

$$X = \frac{-6 \pm \sqrt{28}}{-2}$$

$$X = \frac{-6 + 5.29}{-2} \text{ or } X = \frac{-6 - 5.29}{-2}$$

$$X = \frac{-0.71}{-2} \text{ or } X = \frac{-11.29}{-2}$$

$$X = 0.36 \text{ or } X = 5.65$$