## Quadratic Formula Notes

Monday, May 11, 2015

Cornell Notes
Name Ms. Marcus
Topic Quadratic Formula
Class/ Algebra

Essential
Question:

Quadratic Formula

Steps:

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

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

Solve: $0=2 x^{2}-4 x-5$
(i) Identify $a, b, c$

$$
\begin{aligned}
& a=2 \\
& b=-4 \\
& c=-5
\end{aligned}
$$

(2) substitute

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

(3) simplify

$$
\begin{aligned}
& x=\frac{4 \pm \sqrt{16+40}}{4} \\
& x=\frac{4 \pm \sqrt{56}}{4}
\end{aligned}
$$

(4) Split up the problem

$$
\begin{aligned}
& x=\frac{4+7.48}{4} \text { or } x=\frac{4-7.48}{4} \\
& x=2.87 \text { or } x=-0.87
\end{aligned}
$$

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Topic Quadratic Formula (cont.)
Example:
Solve using the quadratic formula

| $0=-x^{2}+6 x-2$ |
| :--- |
| $a=-1$ |
| $b=6 \quad x=\frac{-b \pm \sqrt{b^{2}-4 a c}}{2 a}$ |
| $c=-2 \quad x=\frac{-(6) \pm \sqrt{(6)^{2}-4(-1)(-2)}}{2(-1)}$ |
| $x=\frac{-6 \pm \sqrt{36-8}}{-2}$ |
| $x=\frac{-6 \pm \sqrt{28}}{-2}$ |
| $x=\frac{-6+5.29}{-2}$ or $x=\frac{-6-5.29}{-2}$ |
| $x=\frac{-0.71}{-2}$ or $x=\frac{-11.29}{-2}$ |
| $x=0.36$ or $x=5.65$ |
|  |

$\square$
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