



Objective: The Quadratic Formula (is Amazing!)

Homework QF-5 – NYA p.588 #1, 3, 5, 18 – 20, 24, 25, 28

Do Now: Solve 1. $x^2 - 18x = 6$ 2. $x^2 + 20x = 0$

Exam Prep: Every non-negative number has two square roots.

A) Always True

B) Sometimes True

C) Never True



This technique may be ugly, but it always works. Simply plug the values in and solve. Other methods may be easier if the correct conditions are met, but this is reliable!

Using the Dreaded Quadratic Formula to Solve Quadratic Equations

The quadratic formula is actually what you get if you use the “completing the square” method on the standard form of a quadratic equation. See the textbook for an astoundingly beautiful demonstration of this extraordinary fact.

<p>Remember Standard Form</p> $ax^2 + bx + c = 0$ <p>Substitute and Solve</p>	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ <p>Two Solutions (\pm)</p>
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Example: Solve $2x^2 + 8x - 10 = 0$

$$x = \frac{-8 \pm \sqrt{8^2 - 4(2)(-10)}}{2(2)}$$

$$x = \frac{-8 \pm \sqrt{64 + 80}}{4}$$

$$x = \frac{-8 \pm \sqrt{144}}{4}$$

SPLIT: $x = \frac{-8 \pm 12}{4}$

$x = \frac{-8 + 12}{4}$ $x = \frac{4}{4}$ $x = 1$	$x = \frac{-8 - 12}{4}$ $x = \frac{-20}{4}$ $x = -5$
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Practice

1. $2x^2 + 8x - 10 = 0$

2. $x^2 + 15 = 8x$

3. $5x^2 - 20 = 0$

4. $x^2 - 5x + 4 = 0$

5. $x^2 + 4x + 4 = 0$

6. $8x^2 - 12x - 8 = 0$