

November 9, 2015
 * Quiz Wednesday
 * Complete the Square
 * Check a solution by substitution
 $x = \frac{9 \pm \sqrt{57}}{8}$
 $f(x) = 8x^2 - 2x - 7$
 $8x^2 - 2x - 7 = 0$
 * No Class Friday November 20th!
 Nov. 23 - 27 Thanksgiving
 * Exam #3 - Monday November 30th
 * Final Exam Friday December 11th
 10:20 - 12:20

Nov 9-9:52 AM

Methods to solve Quadratic Equations

- ① Factor
- ② Square Root Property
 - $x^2 + 9 = 0$
 - $(x - 5/7)^2 + 2 = 0$
- ③ Completing the Square
 - $2x^2 - 5x + 9 = 0$
- ④ Quadratic Formula
 - Solving $ax^2 + bx + c = 0$
 - $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Algebraic Methods

Nov 9-10:17 AM

$7x^2 - 11x + 2 = 0$
 Solve using the Quadratic Formula
 $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
Steps
 ① Know the formula
 ② Identify a, b, & c
 ③ Substitute values into the formula

Nov 9-10:25 AM

$7x^2 - 11x + 2 = 0$ $a=7$
 $b=-11$
 $c=2$

$$x = \frac{-(-11) \pm \sqrt{(-11)^2 - 4(7)(2)}}{2(7)}$$

$$= \frac{11 \pm \sqrt{121 - 28(2)}}{14}$$

$$= \frac{11 \pm \sqrt{121 - 56}}{14}$$

$$= \frac{11 \pm \sqrt{65}}{14}$$

* Always simplify if possible!

$$x = \frac{11 \pm \sqrt{65}}{14}$$

- ① $x = \frac{11}{14} + \frac{\sqrt{65}}{14}$
- ② $x = \frac{11}{14} - \frac{\sqrt{65}}{14}$

Nov 9-10:28 AM

$3x^2 + 6x + 5 = 0$
 $a=3$
 $b=6$
 $c=5$

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

$$= \frac{-6 \pm \sqrt{36 - 60}}{2(3)}$$

$$= \frac{-6 \pm \sqrt{-24}}{6}$$

$$= \frac{-6 \pm i\sqrt{24}}{6}$$

$$= \frac{-6 \pm i2\sqrt{6}}{6}$$

$$= -\frac{6}{6} \pm \frac{2\sqrt{6}}{6} i$$

$$= -1 \pm \frac{\sqrt{6}}{3} i$$

$\sqrt{24} = \sqrt{4 \cdot 6}$
 $= \sqrt{4} \sqrt{6}$
 $= 2\sqrt{6}$

Nov 9-10:36 AM