

## 1.6: Quadratic Formula (Part 3)

EX 1) Solve:  $2x^2 + 7x + 1 = 16$

Step 1:  $2x^2 + 7x - 15 = 0$

Step 2:  $a: 2$   $b: 7$   $c: -15$

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

Step 3:  $x = \frac{-(-7) \pm \sqrt{(-7)^2 - 4(2)(-15)}}{2(2)}$

Step 4:  $x = \frac{-7 \pm \sqrt{169}}{4}$

Step 5:  $x = \frac{-7 \pm 13}{4}$

Step 6: simplify whole fraction

$$x = \frac{-7 + 13}{4}$$

$$x = \frac{3}{2}$$

$$x = \frac{-7 - 13}{4}$$

$$x = -5$$

Ex 2) Solve:  $2x^2 - 8x - 5 = 0$   
 $a: 2$   $b: -8$   $c: -5$

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

$$x = \frac{-(-8) \pm \sqrt{(-8)^2 - 4(2)(-5)}}{2(2)}$$

$$x = \frac{8 \pm \sqrt{104}}{4}$$

$$x = \frac{8 \pm 2\sqrt{26}}{4}$$

$$x = \frac{4 \pm \sqrt{26}}{2}$$

$$\rightarrow \sqrt{104}$$

$$104$$

4     26

(2) (2) (2) (13)

$$\sqrt{\cancel{2} \cdot \cancel{2} \cdot 2 \cdot 13}$$
$$2\sqrt{2 \cdot 13}$$
$$2\sqrt{26}$$

Ex 3) Solve:  $x^2 + 6x + 25 = 0$

$a:1$   $b:6$   $c:25$

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

$$x = \frac{-6 \pm \sqrt{6^2 - 4(1)(25)}}{2(1)}$$

$$x = \frac{-6 \pm \sqrt{-64}}{2} \rightarrow \begin{matrix} \sqrt{-64} \\ i\sqrt{64} \\ 8i \end{matrix}$$

$$x = \frac{-6 \pm 8i}{2}$$

$$x = -3 \pm 4i$$

$$x = -3 \pm 4i$$