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### Unit 8

#### Quadratic Formula Study Guide

Solve using the Quadratic Formula.

1.  $p^2 - 8p + 13 = 0$

$a=1$   $b=-8$   $c=13$

$$x = \frac{8 \pm \sqrt{(-8)^2 + -4(1)(13)}}{2(1)}$$

$$x = \frac{8 \pm \sqrt{64 + -52}}{2}$$

$$x = \frac{8 \pm \sqrt{12}}{2} \Rightarrow x = \frac{8 \pm 3.5}{2} \Rightarrow \boxed{\begin{matrix} x = 5.75 \\ x = 2.25 \end{matrix}}$$

3.  $9x^2 + 6x = -2$

$9x^2 + 6x + 2 = 0$

$a=9$   $b=6$   $c=2$

$$x = \frac{-6 \pm \sqrt{(6)^2 + -4(9)(2)}}{2(9)}$$

$$x = \frac{-6 \pm \sqrt{36 + -72}}{18} \Rightarrow x = \frac{-6 \pm \sqrt{-36}}{18}$$

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$$\boxed{x = \text{no real sol}}$$

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#### Quadratic Formula Study Guide

Solve using the Quadratic Formula.

1.  $p^2 - 8p + 13 = 0$

2.  $2n^2 - 72 = 0$

2.  $2n^2 - 72 = 0$

$a=2$   $b=0$   $c=-72$

$$x = \frac{0 \pm \sqrt{(0)^2 + -4(2)(-72)}}{2(2)}$$

$$x = \frac{0 \pm \sqrt{0 + 576}}{4}$$

$$x = \frac{0 \pm 24}{4} \Rightarrow \boxed{x=6}$$

4.  $n^2 = 6n + 40$

$n^2 - 6n - 40 = 0$

$$x = \frac{6 \pm \sqrt{(-6)^2 + -4(1)(-40)}}{2(1)}$$

$$x = \frac{6 \pm \sqrt{36 + 160}}{2}$$

$$x = \frac{6 \pm \sqrt{196}}{2} \Rightarrow x = \frac{6 \pm 14}{2} \Rightarrow \boxed{\begin{matrix} x = 10 \\ x = -4 \end{matrix}}$$

4.  $9x^2 + 6x = -2$

4.  $n^2 = 6n + 40$