

**Support for College Algebra**  
**University of North Georgia**  
**Fall 2015**  
**Quiz #1**

Name: Key Date: September 9, 2015

Show ALL work!

Complete the Square

1.  $-4x^2 - 7x + 11 = -3$

$$\frac{-4x^2 - 7x}{-4} = \frac{-14}{-4}$$

$$x^2 + \frac{7}{4}x = \frac{7}{2}$$

$$x^2 + \frac{7}{4}x = \frac{7}{2}$$

a.)  $\frac{7}{4} \cdot \frac{1}{2} = \frac{7}{8}$

b.)  $(\frac{7}{8})^2 = \frac{49}{64}$

$$x^2 + \frac{7}{4}x + \frac{49}{64} = \frac{7}{2} + \frac{49}{64} = \frac{224 + 49}{64}$$

$$(x + \frac{7}{8})^2 = \frac{273}{64}$$

$$x + \frac{7}{8} = \pm \sqrt{\frac{273}{64}}$$

$$x = -\frac{7 \pm \sqrt{273}}{8}$$

Use the Quadratic Formula to Solve

2.  $5x^2 - x + 3 = 0$        $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

$a = 5, b = -1, c = 3$

$$x = \frac{-(-1) \pm \sqrt{(-1)^2 - 4(5)(3)}}{2(5)}$$

$$= \frac{1 \pm \sqrt{1 - 60}}{10}$$

$$= \frac{1 \pm \sqrt{-59}}{10}$$

$$x = \frac{1 \pm i\sqrt{59}}{10}$$

$$= \frac{1}{10} \pm \frac{i\sqrt{59}}{10}$$

Solve the Rational Equation

$$\text{LCD: } (x-3)(x+5)(5)$$

$$3. \frac{4}{x-3} + \frac{2}{5} - 3 = \frac{2}{x+5} + 7$$

$$\begin{aligned} & 5(x-3)(x+5) \cdot \frac{4}{x-3} + 5(x-3)(x+5) \cdot \frac{2}{5} + 5(x-3)(x+5) \cdot (-3) \\ & = 5(x-3)(x+5) \cdot \frac{2}{x+5} + 5(x-3)(x+5) \cdot (7) \end{aligned}$$

$$20x + 100 + 2(x^2 + 2x - 15) - 15(x^2 + 2x - 15)$$

$$= 10x - 30 + 35(x^2 + 2x - 15)$$

$$\cancel{20x} + 100 + \cancel{2x^2} + \cancel{4x} - 30 - \cancel{15x^2} - \cancel{30x} + 225$$

$$= \cancel{10x} - 30 + \cancel{35x^2} + \cancel{70x} - 525$$

$$-13x^2 - 6x + 295 = 35x^2 + 80x - 555$$

$$0 = 48x^2 + 86x - 850$$

\* Now Complete the Square or  
use the Quadratic Formula  
to solve for  $x$ .