

**Intermediate Algebra**  
**University of North Georgia**  
**Fall 2015**  
**Quiz #7**

Name: Key Date: November 11, 2015

Complete the Square

1.  $2x^2 - 4x + 3 = 0$

$$\frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2}$$

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

$$\textcircled{a} -2 \cdot \frac{1}{2} = -1$$

$$\textcircled{b} (-1)^2 = 1$$

$$x^2 - 2x + 1 = -\frac{3}{2} + \frac{1}{1}$$

$$(x-1)^2 = \frac{-3+2}{2} = -\frac{1}{2}$$

$$(x-1)^2 = -\frac{1}{2}$$

$$x-1 = \pm \frac{i\sqrt{2}}{2}$$

$$x = 1 \pm \frac{i\sqrt{2}}{2}$$

or

$$x = \frac{2 \pm 2i\sqrt{2}}{2}$$

Show that the following value for x is a solution using substitution.

2.  $x = \frac{7 \pm \sqrt{53}}{2}, x^2 - 7x - 1 = 0$

$$\left(\frac{7 + \sqrt{53}}{2}\right) \left(\frac{7 + \sqrt{53}}{2}\right) - 7\left(\frac{7 + \sqrt{53}}{2}\right) - 1 = 0$$

$$\frac{49 + 14\sqrt{53} + 53}{4} - \frac{49 - 7\sqrt{53}}{2} - 1 = 0$$

$$\frac{102 + 14\sqrt{53} - 98 - 14\sqrt{53}}{4} - 1 = 0$$

$$\frac{102 - 98}{4} - 1 = 0$$

$$\frac{4}{4} - 1 = 0$$

$$1 - 1 = 0$$

$$0 = 0 \checkmark$$