

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

Name: Key Date: September 18, 2015

Show ALL work!

Complete the Square

1. $2x^2 - 5x + 10 = 0$

$$x^2 - \frac{5}{2}x = -5$$

$$\textcircled{a} -\frac{5}{2} \cdot \frac{1}{2} = -\frac{5}{4}$$

$$\textcircled{b} \left(-\frac{5}{4}\right)^2 = \frac{25}{16}$$

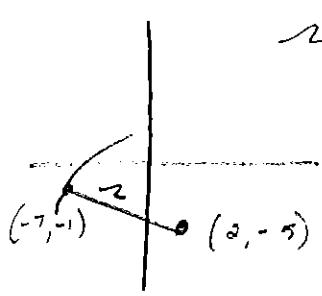
$$x^2 - \frac{5}{2}x + \frac{25}{16} = -5 + \frac{25}{16}$$

$$\left(x - \frac{5}{4}\right)^2 = \frac{-80 + 25}{16}$$

$$x - \frac{5}{4} = \pm \sqrt{-\frac{55}{16}}$$

$$x = \frac{5}{4} \pm \frac{i\sqrt{55}}{4}$$

2. Find the equation of the circle, in standard form, given the following: Center: (2, -5) and Point of Circle: (-7, -1). Hint: plot points and graph the circle.



$$\begin{aligned}
 r = d &= \sqrt{(-7-2)^2 + (-1-(-5))^2} \\
 &= \sqrt{(-9)^2 + (4)^2} \\
 &= \sqrt{81 + 16} \\
 &= \sqrt{97}
 \end{aligned}$$

$$(x - 2)^2 + (y + 5)^2 = 97$$

Use the following equation of a circle to a.) Write the equation in standard form and b.) State the center and radius:

3. $x^2 + 2x + y^2 = 55 + 10y$

$$x^2 + 2x + y^2 - 10y = 55$$

$$x^2 + 2x + 1 + y^2 - 10y + 25 = 55 + 1 + 25$$

$$(x + 1)^2 + (y - 5)^2 = 81$$

Center: $(-1, 5)$

radius: 9