

Foundations for College Algebra
Spring 2016
Quiz #7

Name: Key Date: April 13, 2016

1. State the "sign" pattern of the following trinomials (DO NOT FACTOR!)

- a. $x^2 - 10x + 9$ *same sign, both negative*
- b. $4y^2 - 4y - 48$ *opposite signs, larger negative*
- c. $ax^2 - bx + c$ *same sign, both negative*
- d. $-x^2 + 12x - 11$ *same sign, both negative*

Factor the following completely.

2. $x^2 + x - 42$ $ac = -42$ $b = 1$

+	-
7	6

$$x^2 + 7x - 6x - 42$$

$$x(x+7) - 6(x+7)$$

$(x+7)(x-6)$

 $\Rightarrow x^2 - 6x + 7x - 42$
 $x^2 + x - 42 \checkmark$

3. $16t + 15t^2 - 15$

$$15t^2 + 16t - 15$$
 $ac = 15 \cdot (-15) = -225$ $b = 16$

+	-	-225	16
20	4	-80	\checkmark
25	9	-225	\checkmark

$$15t^2 + 25t - 9t - 15$$

$$5t(3t+5) - 3(3t+5)$$

$(3t+5)(5t-3)$

 $\Rightarrow 15t^2 - 9t + 25t - 15$
 $15t^2 + 16t - 15 \checkmark$

Solve.

4. $x^2 - 4x = 21$

$$x^2 - 4x - 21 = 0$$
 $ac = -21$ $b = -4$

-	+
7	3

$$x^2 - 7x + 3x - 21 = 0$$

$$x(x-7) + 3(x-7) = 0$$

$$(x-7)(x+3) = 0$$

7	-3
(7) ² - 4(7) = 21	x = -3
49 - 28 = 21	(-3) ² - 4(-3) = 21
21 = 21 \checkmark	9 + 12 = 21
	21 = 21 \checkmark

① $x = 7$ ② $x = -3$