

$$40/40 = 100$$

Foundations for College Algebra - MTWF
University of North Georgia
Fall 2015
Exam #2

Name: Key Date: October 30, 2015

Simplify

$$1. \frac{\frac{2}{7} + \frac{5}{x}}{-\frac{6}{x^3}} = \frac{\frac{2x+35}{7x}}{-\frac{6}{x^3}} = \frac{2x+35}{7x} \cdot -\frac{x^3}{6} = \boxed{\frac{-(2x+35)(x^2)}{42}}$$

$$2. (3x^{-2}y^4)(-2x^{-5}y^{-4}) = -6x^{-7}y^0 = \boxed{-\frac{6}{x^7}}$$

3. State the *Domain* and *Range* of the following relation and determine if it is also a function:

$$R = \{(-2, 5), (3, 5), (-11, 5)\}$$

Domain: $\{-2, 3, -11\}$ no repeats! A function
Range: $\{5\}$

4. Define and give an example of the term *Relatively Prime*.

Relatively Prime is when there are no common factors other than "one"

$$2(x+3)$$

Factor the following completely.

5. $21v^3 - 84v^2 + 15v - 60$

$$21v^2(v-4) + 15(v-4)$$

$$(v-4)(21v^2 + 15)$$

$$(v-4)3(7v^2 + 5) \quad \text{or} \quad 3(v-4)(7v^2 + 5)$$

6. $2w^2 + 4w + 48$

$$2(w^2 + 2w + 24)$$

R.P.!

$ac = 24, b = 2$

+	+
?	?

7. $-4x^2 + 15x + 25$

$$-(4x^2 - 15x - 25) \quad ac = 4 \cdot (-25) = -100$$

$$-(4x^2 - 20x + 5x - 25) \quad b = -15$$

-	+
20	5

$$-(4x(x-5) + 5(x-5))$$

$$-(x-5)(4x+5)$$

8. $-8^2 = 64$ True or False? Why?

False.

$$\begin{aligned} -8^2 &= (-1) \cdot 8^2 \\ &= (-1) \cdot 8 \cdot 8 \\ &= -8 \cdot 8 \\ &= -64 \end{aligned}$$

Solve the following equation by **using and stating** the "correct" *Algebraic Tool* for each new line you write as done in class. Hint: pay close attention to what tool you select!

9. $\emptyset(\forall + \odot) - ! = \infty$, for \forall

$$\emptyset \forall + \emptyset \odot - ! = \infty \text{ Dist}$$

$$\emptyset \forall = - \emptyset \odot + ! + \infty \text{ A. I. \& A. Id}$$

$$\boxed{\forall = \frac{-\emptyset \odot + ! + \infty}{\emptyset}} \text{ M. I.}$$

10. Show that $x = \frac{19}{7}$ is a solution of $-4(x - 5) = 3(x + 2) - 5$

$$-4\left(\frac{19}{7} - \frac{5}{1}\right) = 3\left(\frac{19}{7} + \frac{2}{1}\right) - 5$$

$$-4\left(\frac{19 - 35}{7}\right) = 3\left(\frac{19 + 14}{7}\right) - 5$$

$$-4\left(\frac{-16}{7}\right) = 3\left(\frac{33}{7}\right) - 5$$

$$\boxed{\frac{64}{7}} = \frac{99}{7} - \frac{5}{1}$$

$$= \frac{99 - 35}{7}$$

$$= \boxed{\frac{64}{7}}$$