**Worksheet # 2 Unit 6**

**1. Evaluate for x = 2 , y = -4 (substitute given value of each variable into expression)**

 a) x – y b) 3x2 – y c) -y - 4

 x + y 2x + y x

**2. For what values is each rational expression not defined (non-permissible values)**

 **\* Only the denominator is used to determine where an expression is defined.**

 A. set denominator = 0 and solve for the variable.

**ANSWERS**

-3

undefined

0

y ≠ 0

x ≠ -3

a ≠ $\frac{4}{3}$

all values permissible

x ≠ 0 x ≠ -1

x ≠ -5 x ≠ -1

x ≠ -5 x ≠ - ½

m ≠ ± 5

x ≠ $\frac{y}{2}$

x ≠ $\frac{\pm 3y}{2}$

 a) 6x b) 5x + 2y

 4y x + 3

 c) a d) 5x

 3a – 4 x2 + 1

 B. set denominator = 0 , **factor** and solve for the variable.

 a) 5x b) 3x

 x2 + x x2 + 6x + 5

 c) 3x – 1 d) n2 – 49

 2x2 + 11x + 5 m2 – 25

 C. set denominator = 0, (factor?), solve for one variable in terms of the

other variable.

 a) 3x + 5y b) x2 + 7xy + 10y2

 2x – y 4x2 – 9y2

3. Reduce to lowest terms. (Exponent laws)

 a) 36y2 b) (4a3c)2

 -4y 6ab

Factor

Factor, Negative trick 1 – x = -1(x – 1)

 c) a – 9b d) 2x - 2

 3a – 27b 1 – x

**ANSWERS**

-9y

$$\frac{8a^{5}c^{2}}{3b}$$

$$\frac{1}{3}$$

-2

$$\frac{1}{x+6} $$

$ $x ≠ -6, x ≠ 3

$$\frac{-3}{2} $$

$ $y ≠ 0 y ≠ x/6

$$\frac{5(x-2)}{x+12}$$

x ≠ -12, x ≠ -2

$\frac{1}{x+3}$

x ≠ -3 x ≠ $\frac{7}{2}$

4. Identify the non-permissible value(s) (undefined), if any.

 Simplify each expression.

1. Factor

2. State non-permissible values

3. Simplify

 a) x - 3

 x2 + 3x -18

 b) 3xy – 18y2

 12y2 –2xy

 c) 5x2 – 20

 x2 + 14x + 24

 d) 2x - 7

 2x2 – x - 21