MCF 3MI   ## Simplifying Algebraic Expressions   Date: _Feb 13/18_

To simplify an expression, you have to use your algebra rules to make the expression as simple as possible.

To do this, you must _collect like terms_, use the _distributive property_ or _FOIL_.

Ex. 1: Simplify the following.

a) $4x - 5y - 3y - 9x$

$$= 4x - 9x - 5y - 3y$$

$$= -5x - 8y$$

b) $(4x - 7y) - (2y + 3x)$

$$= 4x - 7y - 2y - 3x$$

$$= x - 9y$$

$3xy + 4yx$
$= 3xy + 4xy$
$= 7xy$

$3x^2y + 4y^2x$
$= 3x^2y + 4xy^2$

c) $-4a(2a - 3b)$

$$= -8a^2 + 12ab$$

F O I L
First
Outside
Inside
Last

d) $8(2m - 3) + 3m(5m - 1)$

$$= 16m - 24 + 15m^2 - 3m$$

$$= 15m^2 + 13m - 24$$

e) $(3x - 7)(4x + 9)$

$$= 12x^2 + 27x - 28x - 63$$

$$= 12x^2 - x - 63$$

f) $(2x^2 - 3)(5x^2 + 2)$

$$= 10x^4 + 4x^2 - 15x^2 - 6$$

$$= 10x^4 - 11x^2 - 6$$

g) $x^2y^4(3xy^2 - 4x^3y^2)$

$$= 3x^{2+1}y^{4+2} - 4x^{2+3}y^{4+2}$$

$$= 3x^3y^6 - 4x^5y^6$$

Today's Homework Practice: p. 543 #1bcd, 2bd, 3c, 4   - - - - - - - - - - - - ->

Are there any questions from last day's work?

p. 542 #1a,c,f,h **you will need graph paper!!

Today's Homework Practice:
p. 543 #1bcd, 2bd, 3c, 4

Be ready for the first "**Show What You Know**" on Thursday.

Please put your name at the top of each page, and submit:

Day 1: Integers (Monday)   Day 2: Rational Numbers (Tuesday)
p. 530 #1, 3, 4, 5   pp. 531-532 #1 - 4

p. 542 #1h

1. Graph each quadratic relation. Use your graph to determine

i) the vertex of the parabola $v(-1,4)$

ii) the axis of symmetry $x = -1$ $y = x^2$ $a = 1$ $a = 2$

iii) the y-intercept $= 2$ MG

iv) the x-intercept(s), if any

$x = -2.5, 0.5$ 1 $1 \to 2$

                                                    2 $4 \to 8$

h) $y = 4 - 2(x + 1)^2$ 3 $9 \to 18$

$$\left(y = a(x-h)^2 + k \right)$$

$$y = -2(x+1)^2 + 4$$

$$= -2(x-(-1))^2 + 4$$

$$v(h,k)$$

$$h = -1, k = 4$$

$$v(-1, 4)$$

$$y = 4 - 2(x+1)^2$$