AChor/MPM1D **Name: _____**
Date: _____

Worksheet 3-4: Distributive Property

Recall:

Simplify $5+(-9)$ =

Simplify $5-(-9)$ =

So,

Simplify $x+(-3x)$ =

Simplify $x-(-3x)$ =

What about,

Simplify $x+(-3x+1)$ =

Simplify $x-(-3x+1)$ =

Simplify $2y+(3y-5)$ =

Simplify $2y-(3y-5)$ =

What is the common pattern?

How do we simplify algebraic expressions with brackets? Answer: **Distributive Property**

Assigned Work: WS 3-4; eBook Do p. 166 #1-3, #8, #16-17

Distributive Property:

An algebraic expression can be multiplied by a constant.

When an algebraic expression is multiplied by a constant, each and every term of the algebraic expression is multiplied by that constant. This is called the **Distributive Property**.

e.g., $2(a+b+c) = 2(a) + 2(b) + 2(c) = 2a + 2b + 2c$

e.g., $-3(b+c) = (-3)(b) + (-3)(c) = -3(b) - 3(c) = -3b - 3c$

e.g., $-(x-y) = (-1)(x) - (-1)(y) = -(x) + (y) = -x + y$

Practice 1: Multiplication with Brackets

1. Expand.

(a) $3(x+6)$ (b) $5(x+y-5)$ (c) $-(4a-5)$

(d) $3(2b-c)$ (e) $-4(2x+y-9)$ (f) $5(x^2+3x-y)$

Practice 2: Simplify Algebraic Expression with Brackets

(a) $(2x+1)+2(x-3)$ (b) $(7y^2-4y)+(-5y^2+5y)$

(c) $(3x^2-4xy+6y^2)-(3x^2-8xy-3y^2)$ (d) $3(x^2+3x-1)-2(x^2-4x+2)$

Answers: 1. (a) $3x+18$, (b) $5x+5y-25$, (c) $-4a+20$, (d) $6b-3c$, (e) $-8x-4y+36$, (f) $5x^2+15x-5y$; **2.** (a) $4x-5$, (b) $2y^2+y$, (c) $4xy+9y^2$, (d) $x^2+17x-7$