Name: _____ Period: _____ Date: _____

The Distributive Property Guide Notes

DISTRIBUTIVE PROPERTY

For any numbers a, b, *and* c, *the product of* a *and* $(b+c)$ *is:*

$$a(b+c)=ab+ac \qquad (b+c)a=ba+ca$$

For any numbers a, b, *and* c, *the product of* a *and* $(b-c)$ *is:*

$$a(b-c)=ab-ac \qquad (b-c)a=ba-ca$$

Sample Problem 1: Rewrite using the distributive property, then evaluate.

a.	$8(10+4)$	$=8\cdot 10+8\cdot 4$	$=80+32$	$=112$
b.	$(5+7)12$	$=5\cdot 12+7\cdot 12$	$=50+84$	$=134$
c.	$5(100-72)$	$=5\cdot 100-5\cdot 72$	$=500-360$	$=140$
d.	$\left(2+\frac{1}{5}\right)35$	$=2\cdot 35+\frac{1}{5}\cdot 35$	$=70+7$	$=77$
e.	$(10+7)5$	$=10\cdot 5+7\cdot 5$	$=50+35$	$=85$

TERM is a number, a variable or a product or quotient of numbers and variables.

LIKE TERMS are terms that contain the same variables, with corresponding variables having the same power.

SIMPLIFYING EXPRESSIONS:

Distributive property is used to combine like terms by adding their coefficients. A simplified expression must not have grouping symbols and fractions are reduced to its lowest term.

Sample Problem 2: Simplify.

a.	$18x+3x$	$=21x$		
b.	$5x^2+2-x^2$	$=4x^2+2$		
c.	$3-2(4+x)$	$=3-2(4)-2(x)$	$=3-8-2x$	$=-5-2x$
d.	$-3(2x^2+4x-1)+5x$	$=-3(2x^2)-3(4x)-3(-1)+5x$	$=-6x^2-12x+3+5x$	$=-6x^2-7x+3$
e.	$5(x-7y)+8(3x+2y)$	$=5(x)-5(7y)+8(3x)+8(2y)$	$=5x-35y+24x+16y$	$=29x-19y$

Sample Problem 3: Manny runs a restaurant. One day, a total of 50 steaks are sold. Each steak cost $14.95 and received an average tip of $1 for each. Write the expression that determines the total amount he earned. How much did Manny earned?

$$50(14.95+1)$$
$$=50(15.95)$$
$$=\$797.5$$