

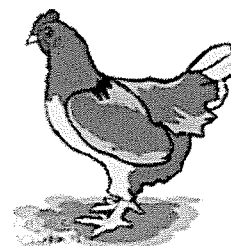
Name: Key  
Date: \_\_\_\_\_

Mr. Johnson  
Math 8

## Lesson 6.4 & 6.5 – The Distributive Property

### Recall:

In the second chapter of the year regarding integers we came across the distributive property. The distributive property was commonly referred to as "feeding the chickens"



### Definitions:

#### Expression:

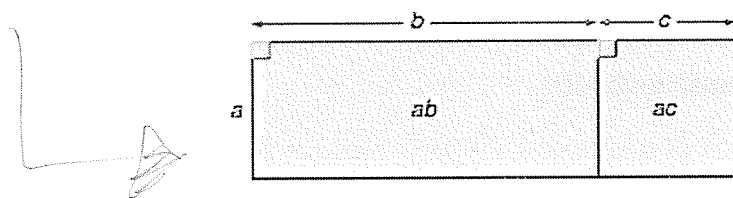
a phrase made up of numbers and/or variables connected by operations

#### Equation:

a statement that two expressions are equal

#### Distributive Property:

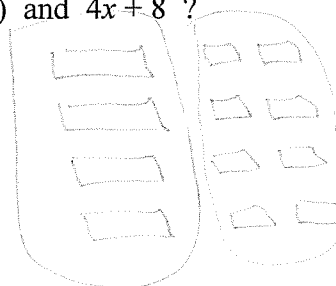
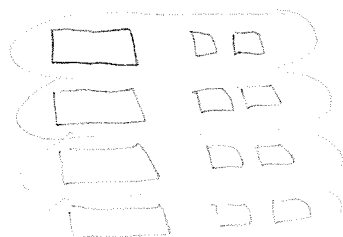
the property stating that a product can be written as a sum or difference of two products



$$a(b + c) = ab + ac$$

That is, the product  $a(b + c)$  is equal to the sum  $ab + ac$ .

You can also model the above distributive property quite easily using models. Using algebra tiles how would you model  $4(x + 2)$  and  $4x + 8$  ?



notice where = sign goes

Examples: Expand each expression.

1.  $2(x+5) = 2x+10$

2.  $-2(3+x) = -6-2x$

review student

3.  $-7(-x-5) = 7x+35$

4.  $x(1+5) = x+5x = 6x$  or  $x(1+5) = x(6) = 6x$

5.  $10(-5+x-y) = -50+10x-10y$

6.  $-4(2-y+x+5) = -8+4y-4x-20 = 4y-4x-28$  or  $-4(7-y+x) = -28+4y-4x = 4y-4x-28$

review student to gather like terms

Notes:

In order to solve an equation using the distributive property do the following:

- use the distributive property to remove the brackets
- gather any like terms you may have on each side of the equation (only required on some questions) *\*elaborate on this*
- work to isolate your variable using the skills from the last sections
- verify your solution (must do this!!!)

appears here

Examples: Solve

1.  $3(x-2)=30$   
 $3x-6=30+6$   
 $3x=36$   
 $\frac{3x}{3}=\frac{36}{3}$   
 $x=12$

check:  $3(12-2)=30$   
 $3(10)=30$   
 $30=30$

2.  $-2(1+y-5)=64$   
 $-2-2y+10=64$   
 $8-2y=64$   
 $-8-8$   
 $-2y=56$   
 $\frac{-2y}{-2}=\frac{56}{-2}$   
 $y=-28$

check:  $-2(1+(-28)-5)=64$   
 $-2(-32)=64$   
 $64=64$

Assignment:

Pg. 342-343  
#’s 4, 7, 8, 9, 12, 13  
(odd letters)

Pg. 346-348  
#’s 4-9, 12-14