6-6 The Distributive Property

Factor the expression – The process of writing numeric or algebraic expressions as a product of their factors.

The Distributive Property – To multiply a sum by a number, multiply each addend by the number outside the parentheses.

Example	**Numbers**	**Algebra**
	$2(7 + 4) = 2 \times 7 + 2 \times 4$	$a(b + c) = ab + ac$

Distributive Property Steps:

1) Multiply the number on the outside of the parentheses by the first number on the inside.
2) Multiply the number on the outside of the parentheses by the second number on the inside.

Mental Math Examples:

3 x 78

$3(70) + 3(8)$
$210 + 24$
234

7 x 74

$7(70) + 7(4)$
$490 + 28$
518

Examples:

$7(y + 2)$

$7y + 14$

$(8 + r)4$

$32 + 4r$

$3(5 - v)$

$15 - 3v$

$(b - 5)15$

$15b - 75$

How to factor the expression

1) Find the the GCF of the set of numbers. (USE CAKE METHOD)
2) Use the Distributive Property to "factor out" the GCF. (Use the GCF as the number on the OUTSIDE of the parentheses.)
3) Use the remaining factors (BOTTOM row of cake method) as the numbers on the inside.

Examples:

4 + 24

4	24
2	12
1	6

GCF=4

$4(1+6)$

5 + 10

$5(1+2)$

5	5	10
	1	2

GCF=5

21 + 18

$3(7+6)$

3	21	18
	7	6

GCF=3

5x + 40

$5(x+8)$

5	5	40
	1	8

GCF=5

4x + 24

$4(x+6)$

2	4	24
2	2	12
	1	6

GCF=4

77x + 21

$7(11x+3)$

7	77	21
	11	3

GCF=7