2.5: Apply the Distributive Property

Goals: *Distribute positive and negative numbers *Identify and combine like terms

 $a(b+c) = _ab + ac_$

 $a(b-c) = _ab - ac _$

____MULTIPLY_____ everything inside the parenthesis by the number or variable on the

___OUTSDIE_____.

Ex: $3(x+1)$	Ex: $x(4 + x)$	Ex: $(a + 3)2$	
3x + 1	$4x + x^2$	2a + 6	



IF THERE IS SUBTRACTION REWRITE IT AS:

Ex: $2(x-5)$	Ex: $3(1-y)$	Ex: $-3(7-x)$	
2x + -10	3 + -3y	-21 + 3x	

Ex: $(x^2 + 4)y$	Ex: $3(x + y + z)$	Ex: $-(2+x)$	
$x^2y + 4y$	3x + 3y + 3z	-2 - x	

<u>Term</u> : a piece of an expression se	parated by <u>adding</u>	orsubtract	ting signs.
Ex: $3x + 7y + 2$	How many terms? 3, th	bey are $3x$, $7y$ and 2	
<u>Coefficient</u> : the number that is	multiplying	the variable.	
Ex: 3 <i>x</i>	What is the coefficient?	3	
<u>Constants</u> : terms that are only _n	umbers, nova	riables	(the word "constant" means
stays the same, the wo	ord "variable" means it can	change	so "constants" can't have
variables)			
Ex: $7x - y + 3$	Name all of the constan	ts: 3	
<u>Like terms:</u> terms that have the e	xact same <u>variable</u>	piece.	
Are the following sets "like terms?	,,,		
Ex: 3 <i>x</i> and <i>x</i> ?	Ex: x^2 and x ?		Ex: <i>xy</i> and <i>x</i> ?
Yes	No		No
Eve 7. and 8.2			
$\mathbf{E}\mathbf{X}; \ / \mathbf{X} \text{ and } \mathbf{\delta} \mathbf{X} ?$			
Yes			
To combine like terms:			
1. Rewrite the original proble	m		
2. Add (or subtract) the <u>coe</u>	efficients of	the like terms toget	her.
5. Keep going until there are i	no more like terms.		
**REMEMBER POSITIVE AN	D NEGATIVE RULES		

C! 110	41	6 11	•	•
Simplify	the	tollo	wing	expressions:

Ex: $7x + 3x$	Ex: $8y - 2y$	Ex: $2z + z$	

z

Ex: $4a - 3b + 2b - a$	Ex: $3(2+x) + 5x$	Ex: $4 + 8(3 + 2x)$	
3a-b	6 + 3x + 5x	4 + 24 + 16x	
	6+8x	28 + 16x	

Ex:
$$-4(3-y) + 6(y-2)$$

-12 + 4y + 6y - 12

-24 + 10y