

## Notes: Distributive Property

The distributive property states

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

So lets apply this distributive property to the following problems

$$5(a + b)$$

Solve both of the following problems with the correct order of operations and by first applying the distributive property.

$$3(4 + 2)$$

$$(7 + 3)2$$

Simplify the following expressions using the distributive property

$$4(x + 3)$$

$$(m + 5)5$$

$$-(x + 1)$$

$$2x(3 - x)$$

$$(6 - x)\frac{1}{2}$$

$$-2(a + b + c + 2x + 2y + 2z)$$

## Notes: Distributive Property

The distributive property states

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

multiply the "a" by all terms inside the parenthesis.

So lets apply this distributive property to the following problems

$$\begin{aligned} & \widehat{5(a+b)} \\ & 5 \times a + 5 \times b \\ & 5a + 5b \end{aligned}$$

Solve both of the following problems with the correct order of operations and by first applying the distributive property.

$$3(4+2)$$

$$12 + 6$$

$$18$$

$$(7+3)2$$

$$10 + 6$$

$$16$$

Simplify the following expressions using the distributive property

$$\begin{aligned} & 4(x+3) \\ & 4(x) + 4(3) \\ & 4x + 12 \end{aligned}$$

$$\begin{aligned} & (m+5)5 \\ & 5(m) + 5(5) \\ & 5m + 25 \end{aligned}$$

$$\begin{aligned} & -(x+1) \\ & -1(x) - 1(1) \\ & -x - 1 \end{aligned}$$

$$2x(3-x)$$

$$2x(3) + 2x(-x)$$

$$6x - 2x^2$$

$$(6-x)\frac{1}{2}$$

$$6(\frac{1}{2}) - x(\frac{1}{2})$$

$$\frac{6}{2} - \frac{x}{2}$$

$$3 - \frac{x}{2}$$

$$-2(a+b+c+2x+2y+2z)$$

$$-2a - 2b - 2c - 4x - 4y - 4z$$

NO LIKE TERMS

SO THIS IS SIMPLIFIED

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

Homework: The Distribute Property

Simplify each expression.

1)  $4(x + 1)$

2)  $10(2 + x + y)$

3)  $(x + 2) * 2$

4)  $-(3x + 4 - z)$

5)  $2(x + 5(3 - x))$

6)  $\frac{1}{2}(10x + 6)$

7)  $4 + 7(1 - 3m)$

8)  $-5(9n - 9) + 10$

9)  $-10(1 - 9x) + (x - 10)$

10)  $x(5 + y)$

11)  $2(x + 3) - 5x + 2xy$

12)  $x(2 + 4y) + 2x$

13)  $x(1 + 2x) + x^2$

14)  $100(.1x + .1) + 9x + 9$

15)  $4(x + 2 - 3y + 12xyz) - 4x - 8 - 48xyz$

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

### Homework: The Distribute Property

Simplify each expression.

$$1) 4(x + 1)$$

$$4x + 4$$

$$2) 10(2 + x + y)$$

$$20 + 10x + 10y$$

$$10x + 10y + 20$$

REARRANGE BY VARIABLE

$$3) (x + 2) * 2$$

$$2x + 4$$

$$4) -(3x + 4 - z)$$

$$-3x - 4 + z$$

$$-3x + z - 4$$

THE - IN FRONT IS ACTUALLY A -1.

$$5) 2(x + 5(3 - x))$$

$$2(x + 15 - 5x)$$

$$2(-4x + 15)$$

$$-8x + 30$$

$$6) \frac{1}{2}(10x + 6)$$

$$5x + 3$$

$$7) 4 + 7(1 - 3m)$$

$$4 + 7 - 21m$$

$$11 - 21m$$

$$8) -5(9n - 9) + 10$$

$$-45n + 45 + 10$$

$$-45n + 55$$

$$9) -10(1 - 9x) + (x - 10)$$

$$-10 + 90x + x - 10$$

$$91x - 20$$

$$10) x(5 + y)$$

$$5x + 5y$$

$$11) 2(x + 3) - 5x + 2xy$$

$$2x + 6 - 5x + 2xy$$

$$3x + 2xy + 6$$

$$12) x(2 + 4y) + 2x$$

$$2x + 4xy + 2x$$

$$4x + 4xy$$

$$13) x(1 + 2x) + x^2$$

$$x + 2x^2 + x^2$$

$$3x^2 + x$$

$$14) 100(.1x + .1) + 9x + 9$$

$$10x + 10 + 9x + 9$$

$$19x + 19$$

$$15) 4(x + 2 - 3y + 12xyz) - 4x - 8 - 48xyz$$

$$4x + 8 - 12y + 48xyz - 4x - 8 - 48xyz$$

$$4x - 4x + 8 - 8 - 12y + 48xyz - 48xyz$$

$$0 + 0 - 12y + 0$$

$$-12y$$

REARRANGE BY LIKE TERMS INTO GROUPS. ITS EASY TO COMBINE LIKE TERMS WHEN THEY ARE CLOSER TOGETHER.