

1. Simplify the following expressions

$$\underline{4x} + \underline{9y} - \underline{15y} + \underline{6x}$$

$$4x + 6x + 9y - 15y$$
$$10x - 6y$$

$$\underline{-3a^2} - \underline{4a} + 2 - \underline{6a} + \underline{9a^2}$$

$$-3a^2 + 9a^2 - 4a - 6a + 2$$
$$6a^2 - 10a + 2$$

Distributive Property

1. Multiply each term on the outside of the parenthesis by each term inside of the parenthesis

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

2. Simplify by combining like terms.

*If the number is positive, separate the terms with a plus sign, if it is negative use a minus sign

Examples:

1. $3(2x + 3)$

$$6x + 9$$

2. $-5(x-5)$

$$-5x + 25$$

3. $2w + 3(w+4)$

$$2w + 3w + 12$$

$$5w + 12$$

4. $3j - 2(5j - 8) + 4$

$$3j - 10j + 16 + 4$$

$$-7j + 20$$

More Examples:

$$4 + 3(2x + 9)$$

$$\underline{4} + 6x + \underline{27}$$

$$6x + 31$$

$$6 - 2(4x + 3y - 6) - 9y$$

$$\underline{6} - 8x - \underline{6y} + \underline{12} - \underline{9y}$$

$$\underline{-8x - 15y + 18}$$

$$5 - 1(3x - 8)$$

$$\underline{5} - 3x + \underline{8}$$

$$-3x + 13$$

You Try!

1. $-3(x+2)$

$$-3x - 6$$

2. $-4(2x+3) - 7$

$$\begin{aligned} & -8x - 12 - 7 \\ & -8x - 19 \end{aligned}$$

3. $-5j - (2j + 6)$

$$-7j - 6$$

4. $-8(3z+10) - 10 + 4z$

$$\begin{aligned} & -24z - 80 - 10 + 4z \\ & -20z - 90 \end{aligned}$$

5. $3(x-3) - 2(3x + 9)$

$$\begin{aligned} & 3x - 9 - 6x - 18 \\ & -3x - 27 \end{aligned}$$