The Distributive Property

The Distributive Property is an algebra property which is used to multiply a single term and two or more terms inside a set of parentheses. Take a look at the problem below.

2(3 + 6)

Because the binomial "3 + 6" is in a set of parentheses, when following the Order of Operations, you must first find the answer of 3 + 6, then multiply it by 2. This gives an answer of 18.

2(3 + 6)
2(9)
18

! Incorrect Method !

It would be incorrect to remove the parentheses and multiply 2 and 3 then add 6, as this would give an incorrect answer of 12.

2(3 + 6)
2 * 3 + 6
6 + 6
12

Examine the expression below.

6(2+4x)

The two terms inside the parentheses cannot be added because they are not like terms. Therefore, 2 + 4x, the expression inside the parentheses, cannot be simplified any further. To simplify this multiplication, another method will be needed. This is where the Distributive Property comes in.

The Distributive Property tells us that we can remove the parentheses if the term that the polynomial is being multiplied by is distributed to, or multiplied with each term inside the parentheses.

This definition is tough to understand without a good example, so observe the example below carefully.

6(2 + 4x)
now by applying the Distributive Property

6 * 2 + 6 * 4x

The parentheses are removed and each term from inside is multiplied by the six.

Now we can simplify the multiplication of the individual terms:

12 + 24x