


FOIL Method


FOIL stands for:

- F**irst - Multiply the first term in each set of parentheses
- O**uter - Multiply the outer term in each set of parentheses
- I**nnner - Multiply the inner term in each set of parentheses
- L**ast - Multiply the last term in each set of parentheses


Now let's give it a try in our problem. We'll start by multiplying the first term in each set of parentheses and then marking down the answer below the problem.


$$(3 + 7x)(6 + 2x)$$
$$18$$


Now we will multiply the outer terms and again mark down the answer below the problem.


$$(3 + 7x)(6 + 2x)$$
$$18 + 6x$$

And the Innners.


$$(3 + 7x)(6 + 2x)$$
$$18 + 6x + 42x$$

And finally the last terms.


$$(3 + 7x)(6 + 2x)$$
$$18 + 6x + 42x + 14x^2$$

Now as you can see the results from the multiplying of the two inners and the two outers are like terms. Our last step is to combine these like terms. We see that $6x + 42x = 48x$, thus

$$18 + 48x + 14x^2$$
