

**Let's take a look at multiplying polynomials!**

When multiplying a monomial by a polynomial, just use distribution!

1.  $5(7n - 2)$

2.  $-4m^3(-3m - 6n + 4p)$

3.  $\frac{3}{4}a(8a + 12)$

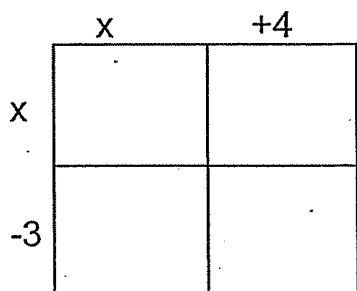
There are two techniques you can use for multiplying binomials. The best part about it is that they are all the same!

It's all about how you write it ...

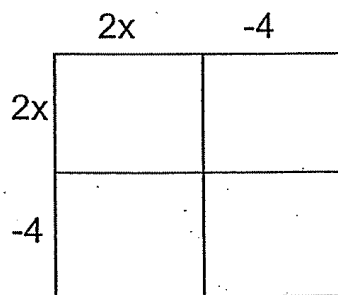
1. FOIL (distributive property)
2. Box Method (Area method)

**Box Method:**To use the box method you are basically finding the area of 4 boxes and then combining like terms. **Remember Area = Length \* Width**

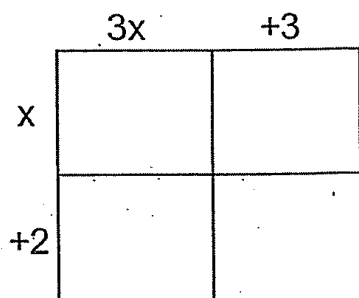
1.  $(x+4)(x-3)$



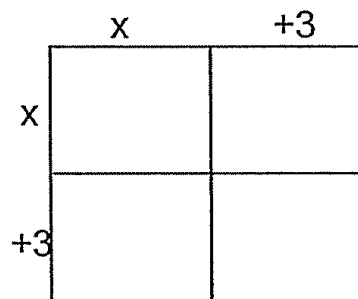
2.  $(2x-4)(2x-4)$



3.  $(3x+3)(x+2)$



4.  $(x+3)(x+3)$



Example 1: Use the FOIL method to multiply the following binomials:  $(y+3)(y+7)$

**F** tells you to multiply the \_\_\_\_\_ terms of each binomial.

**O** tells you to multiply the \_\_\_\_\_ terms of each binomial.

**I** tells you to multiply the \_\_\_\_\_ terms of each binomial.

**L** tells you to multiply the \_\_\_\_\_ terms of each binomial.

Answer:

Example:

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

2.  $(x - 5)(x - 2)$

3.  $(x + 1)(x + 8)$

You try!

Multiply  $(y+4)(y-3)$  using FOIL

**Examples:** Multiply the following.

1)  $(x - 3)(-x^2 + 2x + 4)$

2)  $(x + 3)(x - 5)(x - 6)$