



*FOIL Method for Multiplying Binomials*Example 1


$$(3x - 8)(2x - 4)$$


$$(3x - 8)(2x - 4)$$


$$6x^2$$


$$(3x - 8)(2x - 4)$$

$$6x^2 - 12x$$


$$(3x - 8)(2x - 4)$$

$$6x^2 - 12x - 16x$$


$$(3x - 8)(2x - 4)$$

$$6x^2 - 12x - 16x + 32$$

$$6x^2 - 28x + 32$$

$$6x^2 - 28x + 32$$

Steps

Original Problem

Multiply the **F**irst terms:

$$(3x)(2x) = 6x^2$$

Multiply the **O**utside terms:

$$(3x)(-4) = -12x$$

Multiply the **I**nside terms

$$(-8)(2x) = -16x$$

Multiply the **L**ast terms:

$$(-8)(-4) = 32$$

Combine like terms:

$$-12x - 16x = -28x$$

Solution.

Example 2

$$(3n + 5)(2n - 7)$$

You Try

$$(2h - 3)(4h + 1)$$

Example 1

Steps

Example 2


$(x + 3)^2$ ← Exponent **2** means that we need to “**square**” this binomial or **multiply it by itself**.

$$(2k - 1)^2$$

$$(x+3)^2 = (x+3)(x+3)$$


$$(x+3)(x+3)$$

Use FOIL to multiply the binomials.


$$(x+3)(x+3)$$

Multiply the **First** terms:
 $(x)(x) = x^2$

$$x^2$$



$$(x+3)(x+3)$$

Multiply the **Outer** terms:
 $(x)(3) = 3x$

$$x^2 + 3x$$


You Try

$$(5y + 2)^2$$


$$(x+3)(x+3)$$

Multiply the **Inner** terms:
 $(3)(x) = 3x$

$$x^2 + 3x + 3x$$


$$(x+3)(x+3)$$

Multiply the **Last** terms:
 $(3)(3) = 9$

$$x^2 + 3x + 3x + 9$$

$$x^2 + 6x + 9$$

Combine like terms.

$$x^2 + 6x + 9$$

Solution