

Multiplying Binomial Notes

Multiplication of Algebraic Expression:

Binomial is a polynomial composed of two terms.

Polynomial by Polynomial. The distributive law is once more used to multiply two polynomials

Sample Problem 1: Find the product of the following binomials

1. $(2x - 3)(5x - 1)$

solution

$$2x(5x - 1) = 10x^2 - 2x$$

$$-3(5x - 1) = -15x + 3$$

combine

$$10x^2 - 2x - 15x + 3$$

$$10x^2 - 17x + 3$$

2. $(2x + 3y)(4x - 5y)$

Solution:

$$2x(4x - 5y) = 8x^2 - 10xy$$

$$3y(4x - 5y) = 12xy - 15y^2$$

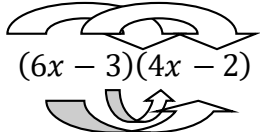
Combine

$$8x^2 - 10xy + 12xy - 15y^2$$

$$8x^2 + 2xy - 15y^2$$

3. $(6x - 3)(4x - 2)$

Solution



$$(6x - 3)(4x - 2)$$

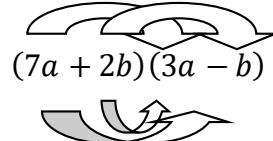
$$(6x)(4x) + (6x)(-2) + (4x)(-3) + (-3)(-2)$$

$$24x^2 - 12x - 12x + 6$$

$$24x^2 - 24x + 6$$

4. $(7a + 2b)(3a - b)$

Solution:



$$(7a + 2b)(3a - b)$$

$$(7a)(3a) + (7a)(-b) + (2b)(3a) + (2b)(-b)$$

$$21a^2 - 7ab + 6ab - 2b^2$$

$$21a^2 - ab - 2b^2$$