Polynomien muuttisäännöt

$$(a+b)(a+b) = a^2 + ab + ab + b^2 = a^2 + 2ab + b^2$$

$$\boxed{(a+b)^2 = a^2 + 2ab + b^2}$$

$$\boxed{(a-b)^2 = a^2 - 2ab + b^2}$$

$$(a+b)(a-b) = a^2 + ab - ab + b^2 = a^2 - b^2$$

$$\boxed{(a+b)(a-b) = a^2 - b^2}$$

Esim. $(\underbrace{2x}_{a} + \underbrace{3}_{b})^2 = \underbrace{(2x)^2}_{a^2} + \underbrace{2 \cdot 2x \cdot 3}_{2 \cdot a \cdot b} + \underbrace{3^2}_{b^2}$

$= 4x^2 + 12x + 9$

Esim. $(5x^2 - 4x)^2 = (5x^2)^2 - 2 \cdot 5x^2 \cdot 4x + (4x)^2 = 25x^4 - 40x^3 + 16x^2$

Esim. $(\underbrace{9x^2 - 3x}_{a-b})(\underbrace{9x^2 + 3x}_{a+b}) = \underbrace{(9x^2)^2 - (3x)^2}_{a^2 - b^2} = 81x^4 - 9x^2$