

قواعد

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

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

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

امثلة

$$\begin{aligned} (x+1)^2 &= x^2 + 2 \times x \times 1 + 1^2 \\ &= x^2 + 2x + 1 \end{aligned}$$

$$\begin{aligned} (3x-5)^2 &= (3x)^2 - 2 \times 3x \times 5 + 5^2 \\ &= 9x^2 - 30x + 25 \end{aligned}$$

$$\begin{aligned} (4x+3)(4x-3) &= (4x)^2 - 3^2 \\ &= 16x^2 - 9 \end{aligned}$$

تمارين

1. $(x+3)^2 =$
2. $(5x+7)^2 =$
3. $(1+2x)^2 =$
4. $(x-2)^2 =$
5. $(1-2x)^2 =$
6. $(3x-4)^2 =$
7. $(11x-13)^2 =$
8. $(x+6)(x-6) =$
9. $(8x-9)(8x+9) =$
10. $(4x+10)(10-4x) =$

1.
$$\begin{aligned} (x+3)^2 &= x^2 + 2 \times x \times 3 + 3^2 \\ &= x^2 + 6x + 9 \end{aligned}$$
2.
$$\begin{aligned} (5x+7)^2 &= (5x)^2 + 2 \times 5x \times 7 + 7^2 \\ &= 25x^2 + 70x + 49 \end{aligned}$$
3.
$$\begin{aligned} (1+2x)^2 &= 1^2 + 2 \times 1 \times 2x + (2x)^2 \\ &= 1 + 4x + 4x^2 \end{aligned}$$
4.
$$\begin{aligned} (x-2)^2 &= x^2 - 2 \times x \times 2 + 2^2 \\ &= x^2 - 4x + 4 \end{aligned}$$
5.
$$\begin{aligned} (1-2x)^2 &= 1^2 - 2 \times 1 \times 2x + (2x)^2 \\ &= 1 - 4x + 4x^2 \end{aligned}$$
6.
$$\begin{aligned} (3x-4)^2 &= (3x)^2 - 2 \times 3x \times 4 + 4^2 \\ &= 9x^2 - 24x + 16 \end{aligned}$$
7.
$$\begin{aligned} (11x-13)^2 &= (11x)^2 - 2 \times 11x \times 13 + 13^2 \\ &= 121x^2 - 286x + 169 \end{aligned}$$
8.
$$\begin{aligned} (x+6)(x-6) &= x^2 - 6^2 \\ &= x^2 - 36 \end{aligned}$$
9.
$$\begin{aligned} (8x-9)(8x+9) &= (8x)^2 - 9^2 \\ &= 64x^2 - 81 \end{aligned}$$
10.
$$\begin{aligned} (4x+10)(10-4x) &= (10+4x)(10-4x) \\ &= 10^2 - (4x)^2 \\ &= 100 - 16x^2 \end{aligned}$$