

<乗法の公式>

☆乗法の公式を利用して計算しましょう。

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

$$\begin{aligned} &= x^2 + (2+3) \times x + 2 \times 3 \\ &= x^2 + 5x + 6 \end{aligned}$$

(3) $(x+9)(x-5)$

$$\begin{aligned} &= x^2 + (9-5) \times x + 9 \times (-5) \\ &= x^2 + 4x - 45 \end{aligned}$$

(5) $(a-1)(a+2)$

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

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

$$\begin{aligned} &= x^2 + (-6-4) \times x + (-6) \times (-4) \\ &= x^2 - 10x + 24 \end{aligned}$$

(4) $(x+5)(x-8)$

$$\begin{aligned} &= x^2 + (5-8) \times x + 5 \times (-8) \\ &= x^2 - 3x - 40 \end{aligned}$$

(6) $(y+2)(y-6)$

$$\begin{aligned} &= y^2 + (2-6) \times y + 2 \times (-6) \\ &= y^2 - 4y - 12 \end{aligned}$$

2. (1) $(a+3)^2$

$$\begin{aligned} &= a^2 + 2 \times a \times 3 + 3^2 \\ &= a^2 + 6a + 9 \end{aligned}$$

(2) $(x-7)^2$

$$\begin{aligned} &= x^2 + 2 \times x \times (-7) + 7^2 \\ &= x^2 - 14x + 49 \end{aligned}$$

(3) $(y+4)^2$

$$\begin{aligned} &= y^2 + 2 \times y \times 4 + 4^2 \\ &= y^2 + 8y + 16 \end{aligned}$$

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

$$\begin{aligned} &= x^2 + 2 \times x \times (-5y) + (-5y)^2 \\ &= x^2 - 10xy + 25y^2 \end{aligned}$$

(2) $(a+4b)^2$

$$\begin{aligned} &= a^2 + 2 \times a \times 4b + (4b)^2 \\ &= a^2 + 8ab + 16b^2 \end{aligned}$$

(3) $(4x-y)^2$

$$\begin{aligned} &= (4x)^2 + 2 \times 4x \times (-y) + (-y)^2 \\ &= 16x^2 - 8xy + y^2 \end{aligned}$$

(4) $(2x+3y)^2$

$$\begin{aligned} &= (2x)^2 + 2 \times 2x \times 3y + (3y)^2 \\ &= 4x^2 + 12xy + 9y^2 \end{aligned}$$

(5) $\left(a + \frac{1}{2}b\right)^2$

$$\begin{aligned} &= a^2 + 2 \times a \times \frac{1}{2}b + \left(\frac{1}{2}b\right)^2 \\ &= a^2 + ab + \frac{1}{4}b^2 \end{aligned}$$

(6) $(-x+2y)^2$

$$\begin{aligned} &= (-x)^2 + 2 \times (-x) \times 2y + (2y)^2 \\ &= x^2 - 4xy + 4y^2 \end{aligned}$$