

# 式の展開

\_\_\_\_年 組 名前

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■ 次の式を展開しなさい。

①  $(s-t-9)(s+t-9)$

②  $(a+b+7)^2$

③  $(x-y+z)(x-y-z)$

④  $(x-y-8)(x-y+8)$

⑤  $(a+b-c)(a-b-c)$

⑥  $(s-t+1)(s-t+5)$

⑦  $(a-b-6)(a-b-4)$

⑧  $(x+y-z)^2$

■ 次の式を展開しなさい。

①  $(s-t-9)(s+t-9)$

$$\begin{aligned} s-9 &= X \text{とおくと} \\ (X-t)(X+t) \\ &= X^2 - t^2 \\ &= (s-9)^2 - t^2 \end{aligned}$$

$$s^2 - 18s + 81 - t^2$$

②  $(a+b+7)^2$

$$\begin{aligned} a+b &= X \text{とおくと} \\ (X+7)^2 \\ &= X^2 + 14X + 49 \\ &= (a+b)^2 + 14(a+b) + 49 \end{aligned}$$

$$a^2 + 2ab + b^2 + 14a + 14b + 49$$

③  $(x-y+z)(x-y-z)$

$$\begin{aligned} x-y &= A \text{とおくと} \\ (A+z)(A-z) \\ &= A^2 - z^2 \\ &= (x-y)^2 - z^2 \end{aligned}$$

$$x^2 - 2xy + y^2 - z^2$$

④  $(x-y-8)(x-y+8)$

$$\begin{aligned} x-y &= A \text{とおくと} \\ (A-8)(A+8) \\ &= A^2 - 64 \\ &= (x-y)^2 - 64 \end{aligned}$$

$$x^2 - 2xy + y^2 - 64$$

⑤  $(a+b-c)(a-b-c)$

$$\begin{aligned} a-c &= X \text{とおくと} \\ (X+b)(X-b) \\ &= X^2 - b^2 \\ &= (a-c)^2 - b^2 \end{aligned}$$

$$a^2 - 2ac + c^2 - b^2$$

⑥  $(s-t+1)(s-t+5)$

$$\begin{aligned} s-t &= X \text{とおくと} \\ (X+1)(X+5) \\ &= X^2 + 6X + 5 \\ &= (s-t)^2 + 6(s-t) + 5 \end{aligned}$$

$$s^2 - 2st + t^2 + 6s - 6t + 5$$

⑦  $(a-b-6)(a-b-4)$

$$\begin{aligned} a-b &= X \text{とおくと} \\ (X-6)(X-4) \\ &= X^2 - 10X + 24 \\ &= (a-b)^2 - 10(a-b) + 24 \end{aligned}$$

$$a^2 - 2ab + b^2 - 10a + 10b + 24$$

⑧  $(x+y-z)^2$

$$\begin{aligned} x+y &= A \text{とおくと} \\ (A-z)^2 \\ &= A^2 - 2zA + z^2 \\ &= (x+y)^2 - 2z(x+y) + z^2 \end{aligned}$$

$$x^2 + 2xy + y^2 - 2xz - 2yz + z^2$$