

年 組 番 名前

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次の式を、乗法公式を使って解きなさい。

$$\begin{aligned}
 [1] & (x+3)^2 \\
 &= x^2 + 2 \times 3 \times x + 3^2 \\
 &= x^2 + 6x + 9
 \end{aligned}$$

$$\begin{aligned}
 [3] & (x-10)(x+10) \\
 &= x^2 - 10^2 \\
 &= x^2 - 100
 \end{aligned}$$

文字も数字も同じで
符号だけが違うときは
・・・?

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

$$\begin{aligned}
 [7] & (x-6)(x+6) \\
 &= x^2 - 6^2 \\
 &= x^2 - 36
 \end{aligned}$$

$$\begin{aligned}
 [9] & (y-2)^2 \\
 &= y^2 - 2 \times 2 \times y + (-2)^2 \\
 &= y^2 - 4y + 4
 \end{aligned}$$

文字はxでなくても
大丈夫ですよ!

$$\begin{aligned}
 [11] & (2a-6b)(2a+5b) \\
 & \quad 2a=A \text{ とおく} \\
 &= (A-6b)(A+5b) \\
 &= A^2 - bA - 30b^2 \\
 &= (2a)^2 - b \times 2a - 30b^2 \\
 &= 4a^2 - 2ab - 30b^2
 \end{aligned}$$

公式①

$$\begin{aligned}
 [2] & (y+1)(z-2) \\
 &= yz - 2y + z - 2
 \end{aligned}$$

文字が違いますね!

$$\begin{aligned}
 [4] & (x+2)(x-8) \\
 &= x^2 + (2-8)x + 2 \times -8 \\
 &= x^2 - 6x - 16
 \end{aligned}$$

$$\begin{aligned}
 [6] & (x+3)(x-3) \\
 &= x^2 - 3^2 \\
 &= x^2 - 9
 \end{aligned}$$

$$\begin{aligned}
 [8] & (x+2)^2 \\
 &= x^2 + 2 \times 2 \times x + 2^2 \\
 &= x^2 + 4x + 4
 \end{aligned}$$

$$\begin{aligned}
 [10] & (x-3)(x-5) \\
 &= x^2 + (-3-5)x - 3 \times -5 \\
 &= x^2 - 8x + 15
 \end{aligned}$$

$$\begin{aligned}
 [12] & (x+y+z)(x+y-3z) \\
 & \quad x+y=A \text{ とおく} \\
 &= (A+z)(A-3z) \\
 &= A^2 - 2zA - 3z^2 \\
 &= (x+y)^2 - 2z(x+y) - 3z^2 \\
 &= x^2 + 2xy + y^2 - 2xz - 2zy - 3z^2
 \end{aligned}$$

公式①