

多項式10

__組__番 氏名__

<いろいろな式の展開>

問1 次の式を展開しなさい。

$$\begin{aligned} \textcircled{1} \quad & (2a+7)(2a+3) \\ & = 4a^2 + 6a + 14a + 21 \\ & = 4a^2 + 20a + 21 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad & (3x-4)(3x-2) \\ & = 9x^2 - 6x - 12x + 8 \\ & = 9x^2 - 18x + 8 \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad & \left(\frac{1}{2}x+5\right)\left(\frac{1}{2}x-3\right) \\ & = \frac{1}{4}x^2 - \frac{3}{2}x + \frac{5}{2}x - 15 \\ & = \frac{1}{4}x^2 + x - 15 \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad & (-4a+3)(-4a-6) \\ & = 16a^2 + 24a - 12a - 18 \\ & = 16a^2 + 12a - 18 \end{aligned}$$

問2 次の式を展開しなさい。

$$\begin{aligned} \textcircled{1} \quad & (5x+2)^2 \\ & = 25x^2 + 20x + 4 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad & (3x-4y)^2 \\ & = 9x^2 - 24xy + 16y^2 \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad & (2a-5b)^2 \\ & = 4a^2 - 20ab + 25b^2 \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad & \left(\frac{1}{2}x-6y\right)^2 \\ & = \frac{1}{4}x^2 - 6xy + 36y^2 \end{aligned}$$

問3 次の式を計算しなさい。

$$\begin{aligned} \textcircled{1} \quad & (x-2)^2 + (x+4)(x+1) \\ & = x^2 - 4x + 4 + x^2 + 5x + 4 \\ & = 2x^2 + x + 8 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad & 2(x+1)(x-1) - (x-3)(x+2) \\ & = 2(x^2 - 1) - (x^2 - x - 6) \\ & = 2x^2 - 2 - x^2 + x + 6 \\ & = x^2 + x + 4 \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad & 4(a+1)^2 - (2a-1)^2 \\ & = 4(a^2 + 2a + 1) - (4a^2 - 4a + 1) \\ & = 4a^2 + 8a + 4 - 4a^2 + 4a - 1 \\ & = 12a + 3 \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad & (x-6)^2 - (x+6)^2 \\ & = x^2 - 12x + 36 - (x^2 + 12x + 36) \\ & = x^2 - 12x + 36 - x^2 - 12x - 36 \\ & = -24x \end{aligned}$$