

1章(多項式) 1節(多項式の計算)

5. いろいろな式の展開

年 組 番

名前

1. 次の式を展開しなさい。

$$(2x + 3)(2x + 7)$$

$$\begin{aligned} &= (2x)^2 + (3 + 7) \times 2x + 3 \times 7 \\ &= 4x^2 + 20x + 21 \end{aligned}$$

$$(3x - 2)(3x - 5)$$

$$\begin{aligned} &= (3x)^2 + (-2 - 5) \times 3x + (-2) \times (-5) \\ &= 9x^2 - 21x + 10 \end{aligned}$$

$$(2x + 1)^2$$

$$\begin{aligned} &= (2x)^2 + 2 \times 1 \times 2x + 1^2 \\ &= 4x^2 + 4x + 1 \end{aligned}$$

$$(2x - 5)^2$$

$$\begin{aligned} &= (2x)^2 - 2 \times 5 \times 2x + 5^2 \\ &= 4x^2 - 20x + 25 \end{aligned}$$

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

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

$$(2x - 5y)^2$$

$$\begin{aligned} &= (2x)^2 - 2 \times 5y \times 2x + (5y)^2 \\ &= 4x^2 - 20xy + 25y^2 \end{aligned}$$

$$\left(2x - \frac{1}{2}\right)^2$$

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

$$\left(2x + \frac{1}{3}\right)^2$$

$$\begin{aligned} &= (2x)^2 + 2 \times \frac{1}{3} \times 2x + \left(\frac{1}{3}\right)^2 \\ &= 4x^2 + \frac{4}{3}x + \frac{1}{9} \end{aligned}$$

$$(x + 4y)(x - 4y)$$

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

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

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

$$\left(3x + \frac{1}{2}\right)\left(3x - \frac{1}{2}\right)$$

$$\begin{aligned} &= (3x)^2 - \left(\frac{1}{2}\right)^2 \\ &= 9x^2 - \frac{1}{4} \end{aligned}$$

$$\left(5x - \frac{2}{3}\right)\left(5x + \frac{2}{3}\right)$$

$$\begin{aligned} &= (5x)^2 - \left(\frac{2}{3}\right)^2 \\ &= 25x^2 - \frac{4}{9} \end{aligned}$$