

多項式の計算② 解答と解説

[1] 解答

- (1) $2x^2 - 2x$
- (2) $10m - 11n$
- (3) $4a - 6b$
- (4) $2x - 5y + 4$

$$\begin{aligned} (1) \quad & 9x^2 - 4x + 2x - 7x^2 = 9x^2 - 7x^2 - 4x + 2x \\ &= (9 - 7)x^2 + (-4 + 2)x \\ &= 2x^2 - 2x \end{aligned}$$

$$\begin{aligned} (2) \quad & (2m - 5n) + (8m - 6n) = 2m - 5n + 8m - 6n \\ &= 2m + 8m - 5n - 6n \\ &= 10m - 11n \end{aligned}$$

$$\begin{aligned} (3) \quad & (-12a + 18b) \div (-3) = (-12a + 18b) \times \left(-\frac{1}{3}\right) \\ &= -12a \times \left(-\frac{1}{3}\right) + 18b \times \left(-\frac{1}{3}\right) \\ &= 4a - 6b \end{aligned}$$

$$\begin{aligned} (4) \quad & \frac{1}{4}(8x - 20y + 16) = \frac{1}{4} \times 8x + \frac{1}{4} \times (-20y) + \frac{1}{4} \times 16 \\ &= 2x - 5y + 4 \end{aligned}$$

[2] 解答

- (1) $3a + 6b$
- (2) $9x + 8y$
- (3) $-4x + 15y$
- (4) $5x - 12y$

$$(1) \quad (a + 5b) + (2a + b) = a + 5b + 2a + b$$

$$= 3a + 6b$$

$$(2) \quad (6x + 4y) - (-3x - 4y) = 6x + 4y + 3x + 4y$$

$$= 9x + 8y$$

$$(3) \quad (-9x + 7y) + (5x + 8y) = -9x + 7y + 5x + 8y$$

$$= -4x + 15y$$

$$(4) \quad (3x - 4y) - (8y - 2x) = 3x - 4y - 8y + 2x$$

$$= 5x - 12y$$

$$(5) \quad (10a + 7b - 11) + (15a - 7b - 3) = 10a + 7b - 11 + 15a - 7b - 3$$

$$\begin{aligned} (6) \quad & (8x^2 - 9x + 2) - (7x^2 - 5x + 3) = 8x^2 - 9x + 2 - 7x^2 + 5x - 3 \\ &= x^2 - 4x - 1 \end{aligned}$$

[3] 解答

- (1) $-5x + 3y$
- (2) $10a^2 + 6a - 2$
- (3) $6m - 9n + 3$
- (4) $6x^2 + x - 3$

$$\begin{aligned} (1) \quad & (20x - 12y) \times \left(-\frac{1}{4}\right) = 20x \times \left(-\frac{1}{4}\right) - 12y \times \left(-\frac{1}{4}\right) \\ &= -5x + 3y \end{aligned}$$

$$(2) \quad 2(5a^2 + 3a - 1) = 2 \times 5a^2 + 2 \times 3a + 2 \times (-1)$$

$$= 10a^2 + 6a - 2$$

$$(3) \quad (4m - 6n + 2) \div \frac{2}{3} = (4m - 6n + 2) \times \frac{3}{2}$$

$$= 4m \times \frac{3}{2} - 6n \times \frac{3}{2} + 2 \times \frac{3}{2}$$

$$= 6m - 9n + 3$$

$$(4) \quad (5x^2 - x) + (x^2 + 2x - 3) = 5x^2 - x + x^2 + 2x - 3$$

$$= 5x^2 + x^2 - x + 2x - 3$$

$$= 6x^2 + x - 3$$

$$(5) \quad (3a^2 + 7a - 9) - (a^2 - 1) = 3a^2 + 7a - 9 - a^2 + 1$$

$$= 3a^2 - a^2 + 7a - 9 + 1$$

$$= 2a^2 + 7a - 8$$

$$(6) \quad (2m + 6n + 4) - (3m + 8n - 5) = 2m + 6n + 4 - 3m - 8n + 5$$

$$= 2m - 3m + 6n - 8n + 4 + 5$$

$$= -m - 2n + 9$$

$$(7) \quad (6x^2 - 2x - 5) + (3x^2 + x - 1) = 6x^2 - 2x - 5 + 3x^2 + x - 1$$

$$= 6x^2 + 3x^2 - 2x + x - 5 - 1$$

$$= 9x^2 - x - 6$$