

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) $5x - 12y$
(5) $25a - 14$ (6) $x^2 - 4x - 1$

$$\begin{aligned} (1) \quad (a + 5b) + (2a + b) &= a + 5b + 2a + b \\ &= 3a + 6b \end{aligned}$$

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

$$\begin{aligned} (3) \quad (-9x + 7y) + (5x + 8y) &= -9x + 7y + 5x + 8y \\ &= -4x + 15y \end{aligned}$$

$$\begin{aligned} (4) \quad (3x - 4y) - (8y - 2x) &= 3x - 4y - 8y + 2x \\ &= 5x - 12y \end{aligned}$$

$$\begin{aligned} (5) \quad (10a + 7b - 11) + (15a - 7b - 3) &= 10a + 7b - 11 + 15a - 7b - 3 \\ &= 25a - 14 \end{aligned}$$

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

3 解答 (1) $-5x + 3y$ (2) $10a^2 + 6a - 2$ (3) $6m - 9n + 3$ (4) $6x^2 + x - 3$
(5) $2a^2 + 7a - 8$ (6) $-m - 2n + 9$ (7) $9x^2 - x - 6$

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

$$\begin{aligned} (2) \quad 2(5a^2 + 3a - 1) &= 2 \times 5a^2 + 2 \times 3a + 2 \times (-1) \\ &= 10a^2 + 6a - 2 \end{aligned}$$

$$\begin{aligned} (3) \quad (4m - 6n + 2) \div \frac{2}{3} &= (4m - 6n + 2) \times \frac{3}{2} \\ &= 4m \times \frac{3}{2} - 6n \times \frac{3}{2} + 2 \times \frac{3}{2} \\ &= 6m - 9n + 3 \end{aligned}$$

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

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

$$\begin{aligned} (6) \quad (2m + 6n + 4) - (3m + 8n - 5) &= 2m + 6n + 4 - 3m - 8n + 5 \\ &= 2m - 3m + 6n - 8n + 4 + 5 \\ &= -m - 2n + 9 \end{aligned}$$

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