

多項式の計算④ 解答と解説

(1枚にしたかったので、解答を省略しています)

$$\begin{aligned} \boxed{1} (1) \quad \frac{a+3b}{2} + \frac{a-2b}{3} &= \frac{3(a+3b)}{6} + \frac{2(a-2b)}{6} \\ &= \frac{3(a+3b)+2(a-2b)}{6} \\ &= \frac{3a+9b+2a-4b}{6} \\ &= \frac{5a+5b}{6} \end{aligned}$$

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

$$\begin{aligned} (3) \quad \frac{3a+2b}{4} + \frac{a-2b}{5} &= \frac{5(3a+2b)}{20} + \frac{4(a-2b)}{20} \\ &= \frac{5(3a+2b)+4(a-2b)}{20} \\ &= \frac{15a+10b+4a-8b}{20} \\ &= \frac{19a+2b}{20} \end{aligned}$$

$$\begin{aligned} (4) \quad \frac{2x-3y}{4} - \frac{2x+9y}{6} &= \frac{3(2x-3y)}{12} - \frac{2(2x+9y)}{12} \\ &= \frac{3(2x-3y)-2(2x+9y)}{12} \\ &= \frac{6x-9y-4x-18y}{12} \\ &= \frac{2x-27y}{12} \end{aligned}$$

$$\begin{aligned} (5) \quad \frac{2a-b}{2} - \frac{a-3b}{4} &= \frac{2(2a-b)}{4} - \frac{a-3b}{4} \\ &= \frac{2(2a-b)-(a-3b)}{4} \end{aligned}$$

$$= \frac{4a-2b-a+3b}{4}$$

$$= \frac{3a+b}{4}$$

$$\begin{aligned} (6) \quad \frac{3x+2y}{6} - \frac{3x-2y}{12} &= \frac{2(3x+2y)}{12} - \frac{3x-2y}{12} \\ &= \frac{2(3x+2y)-(3x-2y)}{12} \\ &= \frac{6x+4y-3x+2y}{12} \\ &= \frac{3x+6y}{12} \\ &= \frac{x+2y}{4} \end{aligned}$$

$$\boxed{2} \text{ 解答 } (1) \quad 4x-7y \quad (2) \quad 6m+5n \quad (3) \quad 8a-4b+16$$

$$(4) \quad -9a^2-15a-1 \quad (5) \quad 7x-6y-13 \quad (6) \quad 3a^2+a+2$$

$$\begin{aligned} (1) \quad 5(2x-5y)-6(x-3y) &= 10x-25y-6x+18y \\ &= 10x-6x-25y+18y \\ &= 4x-7y \end{aligned}$$

$$\begin{aligned} (2) \quad -8(m+2n)+7(2m+3n) &= -8m-16n+14m+21n \\ &= -8m+14m-16n+21n \\ &= 6m+5n \end{aligned}$$

$$\begin{aligned} (3) \quad 2(2a+4b)+4(a-3b+4) &= 4a+8b+4a-12b+16 \\ &= 4a+4a+8b-12b+16 \\ &= 8a-4b+16 \end{aligned}$$

$$\begin{aligned} (4) \quad 5(a^2-3a+4)-7(2a^2+3) &= 5a^2-15a+20-14a^2-21 \\ &= 5a^2-14a^2-15a+20-21 \\ &= -9a^2-15a-1 \end{aligned}$$

$$\begin{aligned} (5) \quad 3(x-4y-5)+2(2x+3y+1) &= 3x-12y-15+4x+6y+2 \\ &= 3x+4x-12y+6y-15+2 \\ &= 7x-6y-13 \end{aligned}$$

$$\begin{aligned} (6) \quad 4(2a^2+4a-2)-5(a^2+3a-2) &= 8a^2+16a-8-5a^2-15a+10 \\ &= 8a^2-5a^2+16a-15a-8+10 \\ &= 3a^2+a+2 \end{aligned}$$