

多項式の通分計算

例題 次の計算をせよ。

(1) $\frac{2x-3y}{3} + \frac{3x+2y}{4}$

答

(2) $\frac{a+5b}{2} - \frac{2a-b}{6}$

答

練習 次の計算をせよ。

(1) $\frac{3a+4b}{4} + \frac{-a-3b}{5}$

答

(2) $\frac{2x-y}{3} - \frac{6x-3y}{2}$

答

(2) $\frac{x-y}{3} + \frac{4x-y}{6}$

答

(4) $\frac{x+7y}{10} - \frac{x+3y}{6}$

答

練習 次の計算をせよ。

(1) $\frac{2x+3y}{2} + \frac{-x-4y}{3}$

答

(2) $\frac{6a-b}{3} - \frac{8a-5b}{4}$

答

(3) $m-n + \frac{m+2n}{2}$

答

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

答

(5) $\frac{-2m+n}{12} + \frac{-2m-n}{4}$

答

(6) $-m+3n - \frac{2m+2n}{3}$

答

多項式の通分計算

例題 次の計算をせよ。

$$(1) \frac{2x-3y}{3} + \frac{3x+2y}{4}$$

★

$$\begin{aligned} &= \frac{4(2x-3y)}{12} + \frac{3(3x+2y)}{12} \\ &= \frac{4(2x-3y)+3(3x+2y)}{12} \\ &= \frac{8x-12y+9x+6y}{12} \\ &= \frac{17x-6y}{12} \end{aligned}$$

答 $\frac{17x-6y}{12}$

$$(2) \frac{a+5b}{2} - \frac{2a-b}{6}$$

★

$$\begin{aligned} &= \frac{3(a+5b)}{6} - \frac{2a-b}{6} \\ &= \frac{3(a+5b)-(2a-b)}{6} \\ &= \frac{3a+15b-2a+b}{6} \\ &= \frac{a+16b}{6} \end{aligned}$$

答 $\frac{a+16b}{6}$

練習 次の計算をせよ。

$$(1) \frac{3a+4b}{4} + \frac{-a-3b}{5}$$

★

$$\begin{aligned} &= \frac{5(3a+4b)}{20} + \frac{4(-a-3b)}{20} \\ &= \frac{5(3a+4b)+4(-a-3b)}{20} \\ &= \frac{15a+20b-4a-12b}{20} \\ &= \frac{11a+8b}{20} \end{aligned}$$

答 $\frac{11a+8b}{20}$

$$(2) \frac{x-y}{3} + \frac{4x-y}{6}$$

★

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

答 $\frac{2x-y}{2}$

$$(2) \frac{2x-y}{3} - \frac{6x-3y}{2}$$

★

$$\begin{aligned} &= \frac{2(2x-y)}{6} - \frac{3(6x-3y)}{6} \\ &= \frac{2(2x-y)-3(6x-3y)}{6} \\ &= \frac{4x-2y-18x+9y}{6} \\ &= \frac{-14x+7y}{6} \end{aligned}$$

答 $\frac{-14x+7y}{6}$

$$(4) \frac{x+7y}{10} - \frac{x+3y}{6}$$

★

$$\begin{aligned} &= \frac{3(x+7y)}{30} - \frac{5(x+3y)}{30} \\ &= \frac{3(x+7y)-5(x+3y)}{30} \\ &= \frac{3x+21y-5x-15y}{30} \\ &= \frac{-2x+6y}{30} \\ &= \frac{-x+3y}{15} \end{aligned}$$

答 $\frac{-x+3y}{15}$

練習 次の計算をせよ。

$$(1) \frac{2x+3y}{2} + \frac{-x-4y}{3}$$

★

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

答

$$\frac{4x+y}{6}$$

$$(2) \frac{6a-b}{3} - \frac{8a-5b}{4}$$

★

$$\begin{aligned} &= \frac{4(6a-b)}{12} - \frac{3(8a-5b)}{12} \\ &= \frac{4(6a-b)-3(8a-5b)}{12} \\ &= \frac{24a-4b-24a+15b}{12} \\ &= \frac{11b}{12} \end{aligned}$$

答

$$\frac{11b}{12}$$

$$(3) m-n + \frac{m+2n}{2}$$

★

$$\begin{aligned} &= \frac{2}{2}m - \frac{2}{2}n + \frac{m+2n}{2} \\ &= \frac{2m-2n+(m+2n)}{2} \\ &= \frac{2m-2n+m+2n}{2} \\ &= \frac{3m}{2} \end{aligned}$$

答

$$\frac{3m}{2}$$

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

★

$$\begin{aligned} &= \frac{6}{3}a + \frac{3}{3}b - \frac{3a+4b}{3} \\ &= \frac{6a+3b-(3a+4b)}{3} \\ &= \frac{6a+3b-3a-4b}{3} \\ &= \frac{3a+b}{3} \end{aligned}$$

答

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

$$(5) \frac{-2m+n}{12} + \frac{-2m-n}{4}$$

★

$$\begin{aligned} &= \frac{-2m+n}{12} + \frac{3(-2m-n)}{12} \\ &= \frac{-2m+n+3(-2m-n)}{12} \\ &= \frac{-2m+n-6m-3n}{12} \\ &= \frac{-8m-2n}{12} \\ &= \frac{-4m-n}{6} \end{aligned}$$

答

$$\frac{-4m-n}{6}$$

$$(6) -m+3n - \frac{2m+2n}{3}$$

★

$$\begin{aligned} &= -\frac{3m}{3} + \frac{9}{3}n - \frac{2m+2n}{3} \\ &= \frac{-3m+9n-(2m+2n)}{3} \\ &= \frac{-3m+9n-2m-2n}{3} \\ &= \frac{-5m+7n}{3} \end{aligned}$$

答

$$\frac{-5m+7n}{3}$$