1. $(3x-4)+(x+3)$을 간단히 하면?

① $3x+3$　② $3x-1$　③ $4x-4$

④ $4x-1$　⑤ $4x-3$

해설

$$\begin{aligned}(3x-4)+(x+3) &= 3x-4+x+3\\ &= 4x-1\end{aligned}$$

2. $(3a+b)+(2a-3b)$를 간단히 하면?

① $5a+4b$　② $5a-2b$　③ $5a-4b$

④ $-5a-2b$　⑤ $-5a+4b$

해설

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

3. $(5x+2y-7)+(x-2y-3)=ax+by+c$일 때, $a+b+c$의 값은?

① -4 ② -1 ③ 0 ④ 2 ⑤ 5

해설

$(5x+2y-7)+(x-2y-3)$
$=5x+2y-7+x-2y-3$
$=6x-10$
따라서 $a=6$, $b=0$, $c=-10$이므로
$a+b+c=-4$이다.

4. ( ) $-(5x-2y)=2x+y$에서 ( ) 안에 알맞은 식은?

① $-3x-y$　② $-3x+y$　③ $-3x-2y$

④ $7x-y$　⑤ $7x+2y$

해설

$$\begin{aligned}(\quad)&=(2x+y)+(5x-2y)\\&=2x+y+5x-2y\\&=7x-y\end{aligned}$$

5. ( ) $-(5x-6y)=-3x-y$에서 ( ) 안에 알맞은 식은?

① $2x-3y$　② $2x-5y$　③ $2x-7y$

④ $5x-2y$　⑤ $5x-5y$

해설

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

6. $(3x-4y-3)+(x-2y-3)$을 간단히 하면?

① $2x-3y+6$ ② $2x-2y+4$ ③ $4x-4y-6$

④ $4x-6y-6$ ⑤ $4x-6y+6$

해설

$(3x-4y-3)+(x-2y-3)$

$=3x-4y-3+x-2y-3$

$=4x-6y-6$

7. $(2x-5y-1)+(3x-3y+2)$를 간단히 하면?

① $2x-3y+2$　② $2x+5y-1$　③ $5x-6y+4$

④ $5x-8y+1$　⑤ $5x-5y+3$

해설

$(2x-5y-1)+(3x-3y+2)$
$=2x-5y-1+3x-3y+2$
$=5x-8y+1$

8. $\left(\frac{4}{3}x+\frac{5}{12}y-\frac{7}{4}\right)+\left(-\frac{1}{4}x-\frac{7}{6}y+\frac{2}{3}\right)$를 간단히 했을 때, x의 계수와 상수항의 합은?

① -3 ② $-\frac{11}{4}$ ③ $-\frac{4}{3}$ ④ 0 ⑤ 1

해설

$$\begin{aligned}&\left(\frac{4}{3}x+\frac{5}{12}y-\frac{7}{4}\right)+\left(-\frac{1}{4}x-\frac{7}{6}y+\frac{2}{3}\right)\\&=\left(\frac{16}{12}x+\frac{5}{12}y-\frac{21}{12}\right)+\left(-\frac{3}{12}x-\frac{14}{12}y+\frac{8}{12}\right)\\&=\frac{\left(16x+5y-21-3x-14y+8\right)}{12}\\&=\frac{13x-9y-13}{12}\\&=\frac{13}{12}x-\frac{9}{12}y-\frac{13}{12}\end{aligned}$$

x의 계수 : $\frac{13}{12}$, 상수항 : $-\frac{13}{12}$

$\therefore\ \frac{13}{12}+\left(-\frac{13}{12}\right)=0$

9. 다항식 A에서 $-2x+3y+1$를 빼었더니 $3x+2y-3$이 되었다. 이때, 다항식 A는?

① $-x-3y-5$　② $-x-y+1$　③ $x+5y-2$

④ $5x+3y+1$　⑤ $5x+2y-3$

해설

$$\begin{aligned} A &= (3x+2y-3)+(-2x+3y+1) \\ &= 3x+2y-3-2x+3y+1 \\ &= x+5y-2 \end{aligned}$$

10. $\dfrac{2x+y}{3}+\dfrac{x-2y}{2}$를 간단히 하면?

① $2x+15y$ ② $\dfrac{1}{6}x+\dfrac{5}{4}y$ ③ $\dfrac{7}{6}x-\dfrac{2}{3}y$

④ $x+4y$ ⑤ $\dfrac{5}{4}x-\dfrac{1}{6}y$

해설

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

11. $\dfrac{4x-y}{3}+\dfrac{3x-5y}{2}$를 간단히 하면?

① $-\dfrac{5}{6}x-\dfrac{7}{6}y$ ② $\dfrac{1}{6}x+\dfrac{5}{6}y$ ③ $-\dfrac{7}{6}x+\dfrac{7}{6}y$

④ $-\dfrac{17}{6}x+\dfrac{17}{6}y$ ⑤ $\dfrac{17}{6}x-\dfrac{17}{6}y$

해설

$$\begin{aligned}\frac{4x-y}{3}+\frac{3x-5y}{2} &= \frac{2(4x-y)}{6}+\frac{3(3x-5y)}{6}\\ &= \frac{8x-2y}{6}+\frac{9x-15y}{6}\\ &= \frac{8x-2y+9x-15y}{6}\\ &= \frac{17x-17y}{6}\\ &= \frac{17}{6}x-\frac{17}{6}y\end{aligned}$$

12. $\dfrac{2x+y}{4}+\dfrac{x+3y}{9}=ax+by$일 때, 상수 a, b의 합 $a+b$의 값은?

① $\dfrac{41}{36}$ ② $\dfrac{7}{6}$ ③ $\dfrac{43}{36}$ ④ $\dfrac{11}{9}$ ⑤ $\dfrac{5}{4}$

해설

$$\begin{aligned}\frac{2x+y}{4}+\frac{x+3y}{9}&=\frac{9(2x+y)}{36}+\frac{4(x+3y)}{36}\\&=\frac{18x+9y}{36}+\frac{4x+12y}{36}\\&=\frac{18x+9y+4x+12y}{36}\\&=\frac{22x+21y}{36}\\&=\frac{22}{36}x+\frac{21}{36}y\end{aligned}$$

$\therefore a+b=\dfrac{22}{36}+\dfrac{21}{36}=\dfrac{43}{36}$

13. $\dfrac{2x+y}{4}+\dfrac{x-3y}{3}=ax+by$일 때, 상수 a, b의 합 $a+b$의 값은?

① $\dfrac{1}{12}$ ② $\dfrac{1}{6}$ ③ $\dfrac{1}{4}$ ④ $\dfrac{1}{3}$ ⑤ $\dfrac{5}{12}$

해설

$$\begin{aligned}\frac{2x+y}{4}+\frac{x-3y}{3}&=\frac{3(2x+y)}{12}+\frac{4(x-3y)}{12}\\&=\frac{6x+3y}{12}+\frac{4x-12y}{12}\\&=\frac{6x+3y+4x-12y}{12}\\&=\frac{10x-9y}{12}\\&=\frac{10}{12}x-\frac{9}{12}y\end{aligned}$$

$\therefore\ a+b=\dfrac{10}{12}+\left(-\dfrac{9}{12}\right)=\dfrac{1}{12}$

14. $x=2y$일 때, $\dfrac{x}{x+y}+\dfrac{y}{x-y}$의 값을 구하면? (단, $x\neq 0$, $y\neq 0$)

① $\dfrac{2}{3}$ ② $\dfrac{5}{3}$ ③ $\dfrac{2}{5}$ ④ $\dfrac{3}{5}$ ⑤ $\dfrac{4}{3}$

해설

$\dfrac{x}{x+y}+\dfrac{y}{x-y}$에 $x=2y$를 대입하면

$\dfrac{2y}{2y+y}+\dfrac{y}{2y-y}=\dfrac{2y}{3y}+\dfrac{y}{y}=\dfrac{2}{3}+1=\dfrac{5}{3}$