

$$\begin{array}{r} \textcircled{1} \quad 4x - y = -5 \\ \quad -3x + y = 5 \quad \uparrow \\ \hline \quad \quad \quad x = 0 \\ \quad \quad \quad (0, 5) \end{array}$$

$$\begin{array}{r} \textcircled{2} \quad 4x - 4y = -24 \\ \quad -4x + 6y = 26 \\ \hline \quad \quad 2y = 2 \\ \quad \quad \quad y = 1 \\ 4x - 4(1) = -24 \\ 4x = -20 \\ x = -5 \end{array} \quad (-5, 1)$$

$$\begin{array}{r} \textcircled{3} \quad -2x - y = 5 \\ \quad 8x + y = -5 \\ \hline \quad 6x = 0 \quad (0, -5) \\ \quad \quad \quad x = 0 \\ 8(0) + y = -5 \\ \quad \quad \quad y = -5 \end{array}$$

$$\begin{array}{r} \textcircled{4} \quad 5x - 5y = 15 \\ \quad -5x + 3y = -21 \\ \hline \quad \quad -2y = -6 \quad (6, 3) \\ \quad \quad \quad y = 3 \\ 5x - 5(3) = 15 \\ 5x = 30 \\ x = 6 \end{array}$$

$$\begin{array}{r} \textcircled{5} \quad 3x - y = 7 \\ \quad 5x + y = 25 \quad (4, 5) \\ \hline \quad 8x = 32 \\ \quad \quad \quad x = 4 \\ 3(4) - y = 7 \\ \quad -y = -5 \\ \quad \quad \quad y = 5 \end{array}$$

$$\begin{array}{r} \textcircled{6} \quad -5x + 3y = 14 \\ \quad 7x - 3y = -22 \\ \hline \quad 2x = -8 \quad (-4, -2) \\ \quad \quad \quad x = -4 \\ -5(-4) + 3y = 14 \\ \quad \quad 3y = -6 \\ \quad \quad \quad y = -2 \end{array}$$

mult
through
top or
bottom
by -1

$$\begin{array}{r} \textcircled{7} \quad (x - y = -9) \rightarrow -x + y = 9 \\ \quad x + 5y = -15 \\ \hline \quad \quad 6y = -6 \\ \quad \quad \quad y = -1 \end{array}$$

$$\begin{array}{r} x + 5(-1) = -15 \\ x = -10 \\ (-10, -1) \end{array}$$

⑧ $\begin{matrix} -5x - 4y = 5 \\ -5x - 4y = 5 \end{matrix} > \text{same equations}$
 Infinite Solutions

(2, -5) ⑨ $\begin{matrix} 7x + 5y = -11 \\ -1(x + 5y = -23) \end{matrix}$ $\begin{matrix} 7x + 5y = -11 \\ -x - 5y = 23 \end{matrix}$ $\begin{matrix} 7(2) + 5y = -11 \\ 5y = -25 \\ y = -5 \end{matrix}$
 $\underline{6x = 12}$
 $x = 2$

(1, -1) ⑩ $\begin{matrix} -9x - 5y = -4 \Rightarrow 9x + 5y = 4 \\ 6x - 5y = 11 \end{matrix}$ $\begin{matrix} 9x + 5y = 4 \\ 6x - 5y = 11 \end{matrix}$ $\begin{matrix} 6(1) - 5y = 11 \\ -5y = 5 \\ y = -1 \end{matrix}$
 $\underline{15x = 15}$
 $x = 1$

(-1, 1) ⑪ $\begin{matrix} -4x + 9y = 13 \\ -x + 9y = 10 \end{matrix} \Rightarrow \begin{matrix} 4x - 9y = -13 \\ -x + 9y = 10 \end{matrix}$ $\begin{matrix} -4(4) + 9y = 13 \\ 9y = 9 \\ y = 1 \end{matrix}$
 $\underline{-x + 9y = 10}$
 $3x = -3$
 $x = -1$

(8, -1) ⑫ $\begin{matrix} -x - y = -7 \\ -3x - y = -23 \end{matrix}$ $\begin{matrix} x + y = 7 \\ -3x - y = -23 \end{matrix}$ $\begin{matrix} -8 - y = -7 \\ -y = 1 \\ y = -1 \end{matrix}$
 $\underline{-3x - y = -23}$
 $-2x = -16$
 $x = 8$

(-3, -2) ⑬ $\begin{matrix} -16x + 9y = 30 \\ 3(-8x - 3y = 30) \end{matrix}$ $\begin{matrix} -16x + 9y = 30 \\ -24x - 9y = 90 \end{matrix}$ $\begin{matrix} -8(-3) - 3y = 30 \\ -3y = 6 \\ y = -2 \end{matrix}$
 $\underline{-24x - 9y = 90}$
 $-40x = 120$
 $x = -3$

$$(-4, -5) \text{ (14)}^3 \begin{array}{l} (-4x - 2y = 26) \Rightarrow 12x + 6y = -78 \\ -12x + 10y = -2 \end{array} \quad \begin{array}{l} -12x + 10y = -2 \\ \underline{-12x + 6y = -78} \\ 4y = -80 \\ y = -20 \end{array} \quad \begin{array}{l} -4x - 2(-5) = 26 \\ -4x = 16 \\ x = -4 \end{array}$$

$$\text{IS (15)} \begin{array}{l} -12x + 8y = 24 \\ 2(6x - 4y = -12) \end{array} \quad \begin{array}{l} -12x + 8y = 24 \\ \underline{12x - 8y = -24} \end{array} \quad \rightarrow \text{Infinite}$$

$$(-1, -2) \text{ (16)} \begin{array}{l} -10x + 5y = 0 \\ 2(5x - 2y = -1) \end{array} \quad \begin{array}{l} -10x + 5y = 0 \\ \underline{10x - 4y = -2} \end{array} \quad \begin{array}{l} -10x + 5(-2) = 0 \\ -10x = 10 \\ x = -1 \end{array}$$

$$(-1, -1) \text{ (17)}^3 \begin{array}{l} (-4x - 5y = 9) \Rightarrow 12x + 15y = -27 \\ -12x + 8y = 4 \end{array} \quad \begin{array}{l} 12x + 15y = -27 \\ \underline{-12x + 8y = 4} \\ 23y = -23 \\ y = -1 \end{array} \quad \begin{array}{l} -4x - 5(-1) = 9 \\ -4x = 4 \\ x = -1 \end{array}$$

$$(-3, 3) \text{ (18)}^3 \begin{array}{l} (x + 9y = 24) \\ -3x + 5y = 24 \end{array} \quad \begin{array}{l} 3x + 27y = 72 \\ \underline{-3x + 5y = 24} \\ 32y = 96 \\ y = 3 \end{array} \quad \begin{array}{l} x + 9(3) = 24 \\ x = -3 \end{array}$$

$$(-1, -1) \text{ (19)}^2 \begin{array}{l} (6x + 9y = -15) \Rightarrow 12x + 18y = -30 \\ -3(4x + 10y = -14) \Rightarrow -12x - 30y = 42 \end{array} \quad \begin{array}{l} 12x + 18y = -30 \\ \underline{-12x - 30y = 42} \\ -12y = 12 \\ y = -1 \end{array} \quad \begin{array}{l} 6x + 9(-1) = -15 \\ 6x = -6 \\ x = -1 \end{array}$$

$$\begin{array}{l}
 (0,6) \quad \textcircled{20} \begin{cases} 3x - 4y = -24 \\ 10x + 3y = 18 \end{cases} \rightarrow \begin{array}{l} 9x - 12y = -72 \\ 40x + 12y = 72 \\ \hline 49x = 0 \\ x = 0 \end{array} \\
 \begin{array}{l} 3(0) - 4y = -24 \\ -4y = -24 \\ y = 6 \end{array}
 \end{array}$$

$$\begin{array}{l}
 (1,4) \quad \textcircled{21} \begin{cases} 10x + 5y = 30 \\ -7x + 2y = 1 \end{cases} \rightarrow \begin{array}{l} -20x - 10y = -60 \\ -35x + 10y = 5 \\ \hline -55x = -55 \\ x = 1 \end{array} \\
 \begin{array}{l} 10(1) + 5y = 30 \\ 5y = 20 \\ y = 4 \end{array}
 \end{array}$$

$$\begin{array}{l}
 (1,0) \quad \textcircled{22} \begin{cases} -8x + 7y = -8 \\ -6x - 2y = -6 \end{cases} \rightarrow \begin{array}{l} 24x - 21y = 24 \\ -24x - 8y = -24 \\ \hline -29y = 0 \\ y = 0 \end{array} \\
 \begin{array}{l} -8x + 7(0) = -8 \\ -8x = -8 \\ x = 1 \end{array}
 \end{array}$$

$$\begin{array}{l}
 (-1,-3) \quad \textcircled{23} \begin{cases} 5x + 3y = -14 \\ 2x + 2y = -8 \end{cases} \rightarrow \begin{array}{l} -10x - 6y = 28 \\ 6x + 6y = -24 \\ \hline -4x = 4 \\ x = -1 \end{array} \\
 \begin{array}{l} 5(-1) + 3y = -14 \\ 3y = -9 \\ y = -3 \end{array}
 \end{array}$$

$$\begin{array}{l}
 (2,7) \quad \textcircled{24} \begin{cases} -10x + 5y = 15 \\ 4x - 3y = -13 \end{cases} \rightarrow \begin{array}{l} -30x + 15y = 45 \\ 20x - 15y = -65 \\ \hline -10x = -20 \\ x = 2 \end{array} \\
 \begin{array}{l} -10(2) + 5y = 15 \\ -20 + 5y = 15 \\ 5y = 35 \\ y = 7 \end{array}
 \end{array}$$

Get x same
& y on same side

$$\begin{array}{l}
 \textcircled{25} \begin{array}{l} -6 + y = -7x \rightarrow 7x + y = 6 \\ y + 7x - 12 = 0 \rightarrow 7x + y = 12 \end{array} \quad \text{NS} \\
 0 = 18
 \end{array}$$

Re-arrange!

(-1, 10) (26)

$$\begin{aligned}y - 4x &= 14 \rightarrow -4x + y = 14 \\ 4 - 6x &= y \quad \underline{-6x - y = -4} \\ & \quad \quad \quad -10x = 10 \\ & \quad \quad \quad x = -1\end{aligned}$$

$$\begin{aligned}y - 4(-1) &= 14 \\ y &= 10\end{aligned}$$

(-1, -2) (27)

$$\begin{aligned}3y + 1 &= 5x \rightarrow 5x - 3y = 1 \\ -14y &= 38 + 10x \rightarrow \underline{-10x - 14y = 38} \\ & \quad \quad \quad -20y = 40 \\ & \quad \quad \quad y &= -2\end{aligned}$$

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

(7, -9) (28)

$$\begin{aligned}-13 &= -7x - 4y \rightarrow -7x - 4y = -13 \\ -9x - 4y &= -27 \rightarrow \underline{-9x - 4y = -27} \\ & \quad \quad \quad \underline{9x + 4y = 27} \\ & \quad \quad \quad 2x &= 14 \\ & \quad \quad \quad x &= 7\end{aligned}$$

$$\begin{aligned}-13 &= -7(7) - 4y \\ 36 &= -4y \\ -9 &= y\end{aligned}$$

(1, 3) (29)

$$\begin{aligned}2 + \frac{2}{5}x &= \frac{4}{5}y \rightarrow \underline{-\frac{2}{5}x + \frac{4}{5}y = 2} \\ -x &= -7 + 2y \rightarrow \underline{-x - 2y = -7} \\ & \quad \quad \quad \underline{\frac{2}{5}x + \frac{4}{5}y = \frac{14}{5}} \\ & \quad \quad \quad \frac{5}{8} \cdot \frac{8}{5}y &= \frac{24}{5} \cdot \frac{5}{8}\end{aligned}$$

$$\begin{aligned}-x &= -7 + 2(3) \\ -x &= -1 \\ x &= 1\end{aligned}$$

$$y = 3$$

(-10, 5) (30)

$$\begin{aligned}y &= -x - 15 \rightarrow 2x + y = -15 \\ \underline{-\frac{10}{3} - \frac{4}{3}x - 2y} & \rightarrow \underline{\frac{4}{3}x - 2y = -\frac{10}{3}} \\ & \quad \quad \quad \underline{\frac{4}{3}x - 2y = -\frac{10}{3}} \\ & \quad \quad \quad \frac{3}{10} \cdot \frac{10}{3}x &= \frac{100}{3} \cdot \frac{3}{10}\end{aligned}$$

$$\begin{aligned}y &= -(-10) - 15 \\ y &= 10 - 15 \\ y &= -5\end{aligned}$$

$$x = -10$$