

連立方程式 計算4

NO. 2

名前

/4 点

◆次の連立方程式を解きなさい

$$(1) \begin{cases} \frac{1}{3}x - \frac{1}{4}y = 1 \\ 2x - y = 8 \end{cases}$$

$$(2) \begin{cases} \frac{-4x + 1}{3} - y = 1 \\ 2x - \frac{3 - 2y}{2} = 1 \end{cases}$$

$$(3) \begin{cases} 2(x + 1) - (y - 1) = 4 \\ \frac{1}{4}x + \frac{1}{6}y = 1 \end{cases}$$

$$(4) \begin{cases} \frac{1}{4}x + \frac{2}{3}y = -1 \\ 0.2x - 1.4y = 5 \end{cases}$$

解答

(1) 整理すると

$$\begin{cases} 4x - 3y = 12 & \dots\text{①} \\ 2x - y = 8 & \dots\text{②} \end{cases}$$

① - ② × 2

$$\begin{array}{r} 4x - 3y = 12 \\ -) 4x - 2y = 16 \\ \hline - y = -4 \\ y = 4 \end{array}$$

 $y = 4$ を②に代入して、

$$2x - 4 = 8$$

$$2x = 12$$

$$x = 6$$

$$(x, y) = (6, 4)$$

$$(2) \quad -4x + 1 - 3y = 3$$

$$-4x - 3y = 2 \quad \dots\text{①}$$

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

$$4x + 2y = 5 \quad \dots\text{②}$$

① + ②

$$\begin{array}{r} -4x - 3y = 2 \\ +) 4x + 2y = 5 \\ \hline -1y = 7 \\ y = -7 \end{array}$$

 $y = -7$ を②に代入して、

$$4x + (-14) = 5$$

$$2x = 19$$

$$x = \frac{19}{2}$$

$$(x, y) = \left(\frac{19}{2}, -7\right)$$

$$(3) \quad 2x + 2 - y + 1 = 4$$

$$\begin{cases} 2x - y = 1 \cdots \textcircled{1} \\ 3x + 2y = 12 \cdots \textcircled{2} \end{cases}$$

$$\textcircled{1} \times 2 + 2$$

$$\begin{array}{r} | \quad 4x - 2y = 2 \\ +) \quad 3x + 2y = 12 \\ \hline \quad \quad 7x = 14 \\ \quad \quad x = 2 \end{array}$$

$x = 2$ を①に代入して

$$2 \times 2 - y = 1$$

$$y = 3$$

$$(x, y) = (2, 3)$$

(4) 整理すると

$$\begin{cases} 3x + 8y = -12 \cdots \textcircled{1} \\ x - 7y = 25 \cdots \textcircled{2} \end{cases}$$

$$\textcircled{1} - \textcircled{2} \times 3$$

$$\begin{array}{r} \quad 3x + 8y = -12 \\ -) \quad 3x - 21y = 75 \\ \hline \quad \quad 29y = -87 \\ \quad \quad y = -3 \end{array}$$

$y = -3$ を②に代入して、

$$x - (-21) = 25$$

$$x = 4$$

$$(x, y) = (4, -3)$$