

【中2数学 | 連立方程式】

次の連立方程式を解きなさい。

$$(1) \begin{cases} 2(x+y) - y = 9 & \dots \textcircled{1} \\ x - 3(x-y) = -5 & \dots \textcircled{2} \end{cases} \therefore x=4, y=1$$

①より $2x + y = 9 \dots \textcircled{1}'$
 ②より $-2x + 3y = -5 \dots \textcircled{2}'$
 ①'+②'より $4y = 4 \therefore y = 1$
 ①'に代入 $2x + 1 = 9 \therefore x = 4$

$$(2) \begin{cases} 4(x+2y) + x = 9 & \dots \textcircled{1} \\ 3x = 5(y+5) & \dots \textcircled{2} \end{cases} \therefore x=5, y=-2$$

①より $5x + 8y = 9 \dots \textcircled{1}'$
 ②より $3x - 5y = 25 \dots \textcircled{2}'$
 ①'×3 - ②'×5より $49y = -98 \therefore y = -2$
 ①'に代入 $5x - 16 = 9 \therefore x = 5$

$$(3) \begin{cases} 4x - 3y = 14 & \dots \textcircled{1} \\ \frac{x}{2} - \frac{y}{3} = 2 & \dots \textcircled{2} \end{cases} \therefore x=8, y=6$$

①に代入 $32 - 3y = 14 \therefore y = 6$
 ②×6より $3x - 2y = 12 \dots \textcircled{2}'$
 ①×2 - ②'×3より $-x = -8 \therefore x = 8$

$$(4) \begin{cases} \frac{4x-3}{6} - \frac{y-3}{4} = 2 & \dots \textcircled{1} \\ 6x - 4y = 21 & \dots \textcircled{2} \end{cases} \therefore x=\frac{3}{2}, y=-3$$

①×12より $8x - 6 - 3y + 9 = 24 \therefore 8x - 3y = 21 \dots \textcircled{1}'$
 ②×3 - ①'×4より $-14x = -21 \therefore x = \frac{3}{2}, y = -3$

$$(5) \begin{cases} 3x - 2y = 1 & \dots \textcircled{1} \\ 2.5x + 0.5y = 9.5 & \dots \textcircled{2} \end{cases} \therefore x=3, y=4$$

①に代入 $9 - 2y = 1 \therefore y = 4$
 ②×10より $25x + 5y = 95 \dots \textcircled{2}'$
 ①×5 + ②'×2より $65x = 195 \therefore x = 3$

$$(6) \begin{cases} \frac{2}{5}x - \frac{1}{3}y = 1 & \dots \textcircled{1} \\ 0.5y = 0.1x + 1 & \dots \textcircled{2} \end{cases} \therefore x=5, y=3$$

①×15より $6x - 5y = 15 \dots \textcircled{1}'$
 ②×10より $5y = x + 10 \dots \textcircled{2}'$
 ②'を①'に代入 $6x - (x + 10) = 15 \therefore 5x = 25 \therefore x = 5$
 ②'に代入 $5y = 15 \therefore y = 3$

$$(7) \begin{cases} \frac{2}{x} + \frac{3}{y} = 2 & \dots \textcircled{1} \\ \frac{3}{x} + \frac{2}{y} = -12 & \dots \textcircled{2} \end{cases} \therefore x = -\frac{1}{8}, y = \frac{1}{6}$$

①×3 - ②×2より $\frac{5}{y} = 30 \therefore y = \frac{1}{6}$
 ①に代入 $\frac{2}{x} + 18 = 2 \therefore \frac{2}{x} = -16 \therefore x = -\frac{1}{8}$

$\therefore x = -\frac{1}{8}, y = \frac{1}{6}$

YouTubeチャンネルも見てね▶ 『ふじわら塾長』で検索!!

