

連立方程式の練習問題.2

名前

解答

解答

問 次の連立方程式を解け。

$$(1) \begin{cases} 2x + 3y = 12 \\ 4x - y = 5 \end{cases}$$

$$2x + 3y = 12 \cdots ①$$

$$4x - y = 5 \cdots ②$$

$$4x - y = 5$$

$$-y = 5 - 4x$$

$$y = -5 + 4x$$

$$y = -5 + 4x \text{ を①に代入}$$

$$2x + 3(-5 + 4x) = 12$$

$$2x - 15 + 12x = 12$$

$$14x = 27$$

$$x = \frac{27}{14}$$

$$x = \frac{27}{14} \text{ を②に代入}$$

$$4 \times \frac{27}{14} - y = 5$$

$$\frac{54}{7} - y = 5$$

$$-y = 5 - \frac{54}{7}$$

$$y = \frac{19}{7}$$

答え $x = \frac{27}{14}, y = \frac{19}{7}$

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

$$\frac{1}{2}x + \frac{1}{3}y = 2 \cdots ①$$

$$x - y = 1 \cdots ②$$

$$x - y = 1$$

$$x = 1 + y$$

$$x = 1 + y \text{ を①に代入}$$

$$\frac{1}{2}(1 + y) + \frac{1}{3}y = 2$$

$$\frac{1}{2} + \frac{1}{2}y + \frac{1}{3}y = 2$$

$$\frac{5}{6}y = \frac{3}{2}$$

$$y = \frac{9}{5}$$

$$y = \frac{9}{5} \text{ を②に代入}$$

$$x - \frac{9}{5} = 1$$

$$x = \frac{14}{5}$$

答え $x = \frac{14}{5}, y = \frac{9}{5}$

$$(3) \begin{cases} 0.6x + 0.4y = 5.2 \\ 1.2x - 0.6y = 3.6 \end{cases}$$

$$0.6x + 0.4y = 5.2 \cdots ①$$

$$1.2x - 0.6y = 3.6 \cdots ②$$

$$\textcircled{1} \text{の両辺を10倍}$$

$$6x + 4y = 52 \cdots ③$$

$$\textcircled{2} \text{の両辺を10倍}$$

$$12x - 6y = 36 \cdots ④$$

$$12x - 6y = 36$$

$$-6y = 36 - 12x$$

$$y = -6 + 2x$$

$$y = -6 + 2x \text{ を③に代入}$$

$$6x + 4(-6 + 2x) = 52$$

$$6x - 24 + 8x = 52$$

$$14x = 76$$

$$x = \frac{38}{7}$$

$$x = \frac{38}{7} \text{ を④に代入}$$

$$6 \times \frac{38}{7} + 4y = 52$$

$$4y = \frac{136}{7}$$

$$y = \frac{34}{7}$$

答え $x = \frac{38}{7}, y = \frac{34}{7}$



$$(4) \begin{cases} \frac{1}{3}x + \frac{1}{2}y = 5 \\ 1.2x - 0.4y = 2.8 \end{cases}$$

$$\frac{1}{3}x + \frac{1}{2}y = 5 \cdots \textcircled{1}$$

$$1.2x - 0.4y = 2.8 \cdots \textcircled{2}$$

①の両辺を6倍

$$2x + 3y = 30 \cdots \textcircled{3}$$

②の両辺を10倍

$$12x - 4y = 28 \cdots \textcircled{4}$$

$$12x - 4y = 28$$

$$-4y = 28 - 12x$$

$$y = -7 + 3x$$

$y = -7 + 3x$ を③に代入

$$2x + 3(-7 + 3x) = 30$$

$$2x - 21 + 9x = 30$$

$$11x = 51$$

$$x = \frac{51}{11}$$

$$x = \frac{51}{11} \text{を③に代入}$$

$$2 \times \frac{51}{11} + 3y = 30$$

$$2 \times \frac{51}{11} + 3y = 30$$

$$3y = \frac{228}{11}$$

$$y = \frac{76}{11}$$

答え $x = \frac{51}{11}, y = \frac{76}{11}$

