

C-8 連立方程式①

正答数

組 番 名前

/4

- 次の連立方程式を解きなさい。

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

(1), (2)の両辺をそれぞれ加えると

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

$$x = 4$$

$x = 4$ を(1)に代入

$$\begin{array}{r} 4 + y = 12 \\ y = 8 \end{array}$$

$$\begin{cases} x = 4 \\ y = 8 \end{cases}$$

$$\textcircled{2} \begin{cases} x - 2y = 5 \dots (1) \\ x + y = 2 \dots (2) \end{cases}$$

(1)の両辺から(2)の両辺をひくと

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

$$y = -1$$

$y = -1$ を(2)に代入

$$\begin{array}{r} x - 1 = 2 \\ x = 3 \end{array}$$

$$\begin{cases} x = 3 \\ y = -1 \end{cases}$$

$$\textcircled{3} \begin{cases} x + 2y = 11 \dots (1) \\ 5x - 2y = 7 \dots (2) \end{cases}$$

(1), (2)の両辺をそれぞれ加えると

$$\begin{array}{r} x + 2y = 11 \\ +) 5x - 2y = 7 \\ \hline 6x = 18 \end{array}$$

$$x = 3$$

$x = 3$ を(1)に代入

$$\begin{array}{r} 3 + 2y = 11 \\ y = 4 \end{array}$$

$$\begin{cases} x = 3 \\ y = 4 \end{cases}$$

$$\textcircled{4} \begin{cases} 5x + 4y = -14 \dots (1) \\ 5x - 4y = 10 \dots (2) \end{cases}$$

(1), (2)の両辺をそれぞれ加えると

$$\begin{array}{r} 5x + 4y = -14 \\ +) 5x - 4y = 10 \\ \hline 10x = -4 \end{array}$$

$$x = -\frac{2}{5}$$

$x = -\frac{2}{5}$ を(1)に代入

$$5 \times \left(-\frac{2}{5}\right) + 4y = -14$$

$$y = -3 \quad \begin{cases} x = -\frac{2}{5} \\ y = -3 \end{cases}$$

C-9 連立方程式②

正答数

組 番 名前

/4

● 次の連立方程式を解きなさい。

①
$$\begin{cases} x + 3y = 4 \quad \dots (1) \\ 2x + 5y = 7 \quad \dots (2) \end{cases}$$

$$(1) \times 2 \quad 2x + 6y = 8$$

$$(2) \quad \underline{-) 2x + 5y = 7}$$

$$y = 1$$

 $y = 1$ を(1)に代入

$$x + 3 \times 1 = 4$$

$$x = 1$$

$$\begin{cases} x = 1 \\ y = 1 \end{cases}$$

②
$$\begin{cases} 4x + 6y = 12 \quad \dots (1) \\ x + 3y = 2 \quad \dots (2) \end{cases}$$

$$(1) \quad 4x + 6y = 12$$

$$(2) \times 2 \quad \underline{-) 2x + 6y = 4}$$

$$2x = 8$$

$$x = 4$$

 $x = 4$ を(2)に代入

$$4 + 3y = 2$$

$$y = -\frac{2}{3} \quad \begin{cases} x = 4 \\ y = -\frac{2}{3} \end{cases}$$

③
$$\begin{cases} 6x - 7y = 12 \quad \dots (1) \\ -3x + 2y = 3 \quad \dots (2) \end{cases}$$

$$(1) \quad 6x - 7y = 12$$

$$(2) \times 2 \quad \underline{+) -6x + 4y = 6}$$

$$-3y = 18$$

$$y = -6$$

 $y = -6$ を(1)に代入

$$6x - 7 \times (-6) = 12$$

$$x = -5$$

$$\begin{cases} x = -5 \\ y = -6 \end{cases}$$

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

$$(1) \times 2 \quad -2x - 2y = 6$$

$$(2) \quad \underline{+) 5x + 2y = 9}$$

$$3x = 15$$

$$x = 5$$

 $x = 5$ を(1)に代入

$$-5 - y = 3$$

$$y = -8$$

$$\begin{cases} x = 5 \\ y = -8 \end{cases}$$

C-10 連立方程式③

正答数

組 番 名前

/4

● 次の連立方程式を解きなさい。

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

$$(1) \times 4 \quad 12x + 8y = 20$$

$$(2) \times 3 \quad \underline{12x + 15y = 6}$$

$$-7y = 14$$

$$y = -2$$

$y = -2$ を(1)に代入

$$3x + 2 \times (-2) = 5$$

$$x = 3$$

$$\begin{cases} x = 3 \\ y = -2 \end{cases}$$

$$\textcircled{2} \begin{cases} 3x + 7y = 4 \dots (1) \\ 5x - 2y = -7 \dots (2) \end{cases}$$

$$(1) \times 5 \quad 15x + 35y = 20$$

$$(2) \times 3 \quad \underline{15x - 6y = -21}$$

$$41y = 41$$

$$y = 1$$

$y = 1$ を(1)に代入

$$3x + 7 \times 1 = 4$$

$$x = -1$$

$$\begin{cases} x = -1 \\ y = 1 \end{cases}$$

$$\textcircled{3} \begin{cases} 4x - 3y = -4 \dots (1) \\ 6x - 5y = -8 \dots (2) \end{cases}$$

$$(1) \times 3 \quad 12x - 9y = -12$$

$$(2) \times 2 \quad \underline{12x - 10y = -16}$$

$$y = 4$$

$y = 4$ を(1)に代入

$$4x - 3 \times 4 = -4$$

$$x = 2$$

$$\begin{cases} x = 2 \\ y = 4 \end{cases}$$

$$\textcircled{4} \begin{cases} -5x + 6y = 2 \dots (1) \\ 2x + 9y = 22 \dots (2) \end{cases}$$

$$(1) \times 3 \quad -15x + 18y = 6$$

$$(2) \times 2 \quad \underline{4x + 18y = 44}$$

$$-19x = -38$$

$$x = 2$$

$x = 2$ を(1)に代入

$$-5 \times 2 + 6y = 2$$

$$y = 2$$

$$\begin{cases} x = 2 \\ y = 2 \end{cases}$$

C-11 連立方程式④

正答数

組 番 名前

/4

● 次の連立方程式を解きなさい。

$$\textcircled{1} \begin{cases} y = 2x - 4 & \dots (1) \\ 4x + 3y = 8 & \dots (2) \end{cases}$$

(1)を(2)に代入

$$\begin{aligned} 4x + 3(2x - 4) &= 8 \\ 10x &= 20 \\ x &= 2 \end{aligned}$$

 $x = 2$ を(1)に代入

$$\begin{aligned} y &= 2 \times 2 - 4 \\ y &= 0 \end{aligned}$$

$$\begin{cases} x = 2 \\ y = 0 \end{cases}$$

$$\textcircled{2} \begin{cases} 2x + 5y = 13 & \dots (1) \\ x = y + 3 & \dots (2) \end{cases}$$

(2)を(1)に代入

$$\begin{aligned} 2(y + 3) + 5y &= 13 \\ 7y &= 7 \\ y &= 1 \end{aligned}$$

 $y = 1$ を(2)に代入

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

$$\begin{cases} x = 4 \\ y = 1 \end{cases}$$

$$\textcircled{3} \begin{cases} y = 4x - 1 & \dots (1) \\ 3x - 2y = -13 & \dots (2) \end{cases}$$

(1)を(2)に代入

$$\begin{aligned} 3x - 2(4x - 1) &= -13 \\ -5x &= -15 \\ x &= 3 \end{aligned}$$

 $x = 3$ を(1)に代入

$$\begin{aligned} y &= 4 \times 3 - 1 \\ y &= 11 \end{aligned}$$

$$\begin{cases} x = 3 \\ y = 11 \end{cases}$$

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

(1)を(2)に代入

$$\begin{aligned} 9x + 5 &= -5x - 2 \\ 14x &= -7 \\ x &= -\frac{1}{2} \end{aligned}$$

 $x = -\frac{1}{2}$ を(1)に代入

$$y = 9 \times \left(-\frac{1}{2}\right) + 5$$

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

$$\begin{cases} x = -\frac{1}{2} \\ y = \frac{1}{2} \end{cases}$$

C-12 連立方程式⑤

正答数

組 番 名前

/4

● 次の連立方程式を解きなさい。

$$\textcircled{1} \begin{cases} 0.4x - 0.7y = 1.1 & \dots (1) \\ 2x - 5y = 1 & \dots (2) \end{cases}$$

$$(1) \times 10 \quad 4x - 7y = 11 \dots (3)$$

$$(3) \quad 4x - 7y = 11$$

$$(2) \times 2 \quad \underline{-) 4x - 10y = 2}$$

$$3y = 9$$

$$y = 3$$

$y = 3$ を (2) に代入

$$2x - 5 \times 3 = 1$$

$$x = 8$$

$$\begin{cases} x = 8 \\ y = 3 \end{cases}$$

$$\textcircled{3} \begin{cases} \frac{1}{2}x + \frac{1}{4}y = 1 & \dots (1) \\ 3x + 2y = 7 & \dots (2) \end{cases}$$

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

$$(3) \times 2 \quad 4x + 2y = 8$$

$$(2) \quad \underline{-) 3x + 2y = 7}$$

$$x = 1$$

$x = 1$ を (2) に代入

$$3 \times 1 + 2y = 7$$

$$y = 2$$

$$\begin{cases} x = 1 \\ y = 2 \end{cases}$$

$$\textcircled{2} \begin{cases} 6x + 5y = 4 & \dots (1) \\ 0.2x + 0.3y = 2 & \dots (2) \end{cases}$$

$$(2) \times 10 \quad 2x + 3y = 20 \dots (3)$$

$$(1) \quad 6x + 5y = 4$$

$$(3) \times 3 \quad \underline{-) 6x + 9y = 60}$$

$$-4y = -56$$

$$y = 14$$

$y = 14$ を (1) に代入

$$6x + 5 \times 14 = 4$$

$$x = -11$$

$$\begin{cases} x = -11 \\ y = 14 \end{cases}$$

$$\textcircled{4} \begin{cases} 2x - y = 8 & \dots (1) \\ \frac{3}{5}x - \frac{1}{2}y = 2 & \dots (2) \end{cases}$$

$$(2) \times 10 \quad 6x - 5y = 20 \dots (3)$$

$$(1) \times 5 \quad 10x - 5y = 40$$

$$(3) \quad \underline{-) 6x - 5y = 20}$$

$$4x = 20$$

$$x = 5$$

$x = 5$ を (1) に代入

$$2 \times 5 - y = 8$$

$$y = 2$$

$$\begin{cases} x = 5 \\ y = 2 \end{cases}$$

C-13 $A=B=C$ の形の方程式

正答数

組 番 名前

/4

● 次の方程式を解きなさい。

① $3x - y = 4x + y = 7$

$$\begin{cases} 3x - y = 7 & \dots (1) \\ 4x + y = 7 & \dots (2) \end{cases}$$

(1) $3x - y = 7$

(2) $\underline{+} 4x + y = 7$
 $7x = 14$
 $x = 2$

$x = 2$ を(1)に代入

$$\begin{aligned} 3 \times 2 - y &= 7 \\ y &= -1 \end{aligned}$$

$$\begin{cases} x = 2 \\ y = -1 \end{cases}$$

② $x + 3 = 3x - 5 = y$

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

(1)より $x = 4$

$x = 4$ を(2)に代入

$$\begin{aligned} y &= 4 + 3 \\ &= 7 \end{aligned}$$

$$\begin{cases} x = 4 \\ y = 7 \end{cases}$$

③ $x + 2y = -3x - 4y = 1$

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

(1) $\times 3$ $3x + 6y = 3$

(2) $\underline{+} -3x - 4y = 1$
 $2y = 4$
 $y = 2$

$y = 2$ を(1)に代入

$$\begin{aligned} x + 2 \times 2 &= 1 \\ x &= -3 \end{aligned}$$

$$\begin{cases} x = -3 \\ y = 2 \end{cases}$$

④ $4x + 3y + 4 = x + 10 = 2y$

$$\begin{cases} 4x + 3y + 4 = 2y & \dots (1) \\ x + 10 = 2y & \dots (2) \end{cases}$$

(1)より $y = -4x - 4 \dots (1)'$

(2)より $x = 2y - 10 \dots (2)'$

(1)'を(2)'に代入

$$\begin{aligned} x &= 2(-4x - 4) - 10 \\ x &= -2 \end{aligned}$$

$x = -2$ を(2)に代入

$$\begin{aligned} -2 + 10 &= 2y \\ y &= 4 \end{aligned}$$

$$\begin{cases} x = -2 \\ y = 4 \end{cases}$$