

すきプリ 中学数学

連立方程式の問題【加減法】

もくじ

連立方程式の問題【係数の絶対値がそろっている問題】

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問題

次の連立方程式を加減法で解いてみましょう。

$$\begin{cases} -x - 7y = -9 \\ -x - 3y = -1 \end{cases}$$

$$\begin{cases} -8x - 6y = 22 \\ 4x - 6y = -2 \end{cases}$$

解き方 x を消去する解き方

$$\begin{cases} -x - 7y = -9 & \cdots\cdots\text{①} \\ -x - 3y = -1 & \cdots\cdots\text{②} \end{cases}$$

$$\text{①} \quad -x - 7y = -9$$

$$\text{②} \quad \begin{array}{r} -) -x - 3y = -1 \\ \hline -4y = -8 \end{array}$$

$$y = 2$$

$y = 2$ を②に代入すると

$$-x - 3y = -1$$

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

$$-x - 6 = -1$$

$$-x = 5$$

$$x = -5$$

答え $x = -5, y = 2$

解き方 y を消去する解き方

$$\begin{cases} -8x - 6y = 22 & \cdots\cdots\text{①} \\ 4x - 6y = -2 & \cdots\cdots\text{②} \end{cases}$$

$$\text{①} \quad -8x - 6y = 22$$

$$\text{②} \quad \begin{array}{r} -) 4x - 6y = -2 \\ \hline -12x = 24 \end{array}$$

$$x = -2$$

$x = -2$ を②に代入すると

$$4x - 6y = -2$$

$$4 \times (-2) - 6y = -2$$

$$-8 - 6y = -2$$

$$-6y = 6$$

$$y = -1$$

答え $x = -2, y = -1$

参考 y を消去する解き方

$$\begin{cases} -x - 7y = -9 & \cdots\cdots\text{①} \\ -x - 3y = -1 & \cdots\cdots\text{②} \end{cases}$$

$$\text{①} \times 3 \quad -3x - 21y = -27$$

$$\text{②} \times 7 \quad \begin{array}{r} -) -7x - 21y = -7 \\ \hline 4x = -20 \end{array}$$

$$x = -5$$

$x = -5$ を②に代入すると

$$-x - 3y = -1$$

$$-1 \times (-5) - 3y = -1$$

$$5 - 3y = -1$$

$$-3y = -6$$

$$y = 2$$

答え $x = -5, y = 2$

参考 x を消去する解き方

$$\begin{cases} -8x - 6y = 22 & \cdots\cdots\text{①} \\ 4x - 6y = -2 & \cdots\cdots\text{②} \end{cases}$$

$$\text{①} \quad -8x - 6y = 22$$

$$\text{②} \times 2 \quad \begin{array}{r} +) 8x - 12y = -4 \\ \hline -18y = 18 \end{array}$$

$$y = -1$$

$y = -1$ を②に代入すると

$$4x - 6y = -2$$

$$4x - 6 \times (-1) = -2$$

$$4x + 6 = -2$$

$$4x = -8$$

$$x = -2$$

答え $x = -2, y = -1$

$$\begin{cases} -x + 4y = 3 \\ -x + 6y = 7 \end{cases}$$

$$\begin{cases} -x - 3y = 18 \\ -x - 2y = 11 \end{cases}$$

解き方 x を消去する解き方

$$\begin{cases} -x + 4y = 3 & \cdots\cdots\text{①} \\ -x + 6y = 7 & \cdots\cdots\text{②} \end{cases}$$

$$\begin{array}{r} \text{①} \quad -x + 4y = 3 \\ \text{②} \quad -) -x + 6y = 7 \\ \hline \quad \quad -2y = -4 \\ \quad \quad \quad y = 2 \end{array}$$

$y = 2$ を①に代入すると

$$\begin{array}{r} -x + 4y = 3 \\ -x + 4 \times 2 = 3 \\ -x + 8 = 3 \\ -x = -5 \\ x = 5 \end{array}$$

答え $x = 5, y = 2$

解き方 x を消去する解き方

$$\begin{cases} -x - 3y = 18 & \cdots\cdots\text{①} \\ -x - 2y = 11 & \cdots\cdots\text{②} \end{cases}$$

$$\begin{array}{r} \text{①} \quad -x - 3y = 18 \\ \text{②} \quad -) -x - 2y = 11 \\ \hline \quad \quad -y = 7 \\ \quad \quad \quad y = -7 \end{array}$$

$y = -7$ を②に代入すると

$$\begin{array}{r} -x - 2y = 11 \\ -x - 2 \times (-7) = 11 \\ -x + 14 = 11 \\ -x = -3 \\ x = 3 \end{array}$$

答え $x = 3, y = -7$

参考 y を消去する解き方

$$\begin{cases} -x + 4y = 3 & \cdots\cdots\text{①} \\ -x + 6y = 7 & \cdots\cdots\text{②} \end{cases}$$

$$\begin{array}{r} \text{①} \times 3 \quad -3x + 12y = 9 \\ \text{②} \times 2 \quad -) -2x + 12y = 14 \\ \hline \quad \quad -x \quad \quad = -5 \\ \quad \quad \quad x = 5 \end{array}$$

$x = 5$ を①に代入すると

$$\begin{array}{r} -x + 4y = 3 \\ -1 \times 5 + 4y = 3 \\ -5 + 4y = 3 \\ 4y = 8 \\ y = 2 \end{array}$$

答え $x = 5, y = 2$

参考 y を消去する解き方

$$\begin{cases} -x - 3y = 18 & \cdots\cdots\text{①} \\ -x - 2y = 11 & \cdots\cdots\text{②} \end{cases}$$

$$\begin{array}{r} \text{①} \times 2 \quad -2x - 6y = 36 \\ \text{②} \times 3 \quad -) -3x - 6y = 33 \\ \hline \quad \quad \quad x \quad \quad = 3 \\ \quad \quad \quad \quad \quad x = 3 \end{array}$$

$x = 3$ を②に代入すると

$$\begin{array}{r} -x - 2y = 11 \\ -1 \times 3 - 2y = 11 \\ -3 - 2y = 11 \\ -2y = 14 \\ y = -7 \end{array}$$

答え $x = 3, y = -7$

$$\begin{cases} 3x - 3y = 12 \\ 6x + 3y = 15 \end{cases}$$

$$\begin{cases} -x - y = 12 \\ x + 3y = -24 \end{cases}$$

解き方 y を消去する解き方

$$\begin{cases} 3x - 3y = 12 & \cdots\cdots\textcircled{1} \\ 6x + 3y = 15 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\textcircled{1} \quad 3x - 3y = 12$$

$$\textcircled{2} \quad \begin{array}{r} +) 6x + 3y = 15 \\ \hline 9x \quad \quad = 27 \end{array}$$

$$x = 3$$

$x = 3$ を $\textcircled{1}$ に代入すると

$$3x - 3y = 12$$

$$3 \times 3 - 3y = 12$$

$$9 - 3y = 12$$

$$-3y = 3$$

$$y = -1$$

答え $x = 3, y = -1$

解き方 x を消去する解き方

$$\begin{cases} -x - y = 12 & \cdots\cdots\textcircled{1} \\ x + 3y = -24 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\textcircled{1} \quad -x - y = 12$$

$$\textcircled{2} \quad \begin{array}{r} +) x + 3y = -24 \\ \hline 2y = -12 \end{array}$$

$$y = -6$$

$y = -6$ を $\textcircled{1}$ に代入すると

$$-x - y = 12$$

$$-x - 1 \times (-6) = 12$$

$$-x + 6 = 12$$

$$-x = 6$$

$$x = -6$$

答え $x = -6, y = -6$

参考 x を消去する解き方

$$\begin{cases} 3x - 3y = 12 & \cdots\cdots\textcircled{1} \\ 6x + 3y = 15 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\textcircled{1} \times 2 \quad 6x - 6y = 24$$

$$\textcircled{2} \quad \begin{array}{r} -) 6x + 3y = 15 \\ \hline -9y = 9 \end{array}$$

$$y = -1$$

$y = -1$ を $\textcircled{1}$ に代入すると

$$3x - 3y = 12$$

$$3x - 3 \times (-1) = 12$$

$$3x + 3 = 12$$

$$3x = 9$$

$$x = 3$$

答え $x = 3, y = -1$

参考 y を消去する解き方

$$\begin{cases} -x - y = 12 & \cdots\cdots\textcircled{1} \\ x + 3y = -24 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\textcircled{1} \times 3 \quad -3x - 3y = 36$$

$$\textcircled{2} \quad \begin{array}{r} +) x + 3y = -24 \\ \hline -2x \quad \quad = 12 \end{array}$$

$$x = -6$$

$x = -6$ を $\textcircled{1}$ に代入すると

$$-x - y = 12$$

$$-1 \times (-6) - y = 12$$

$$6 - y = 12$$

$$-y = 6$$

$$y = -6$$

答え $x = -6, y = -6$

$$\begin{cases} -4x - 2y = -24 \\ 4x - y = 0 \end{cases}$$

$$\begin{cases} -2x - y = 2 \\ 6x + y = 2 \end{cases}$$

解き方 x を消去する解き方

$$\begin{cases} -4x - 2y = -24 & \cdots\cdots\textcircled{1} \\ 4x - y = 0 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad -4x - 2y = -24 \\ \textcircled{2} \quad +) \quad 4x - y = 0 \\ \hline \quad \quad -3y = -24 \\ \quad \quad \quad y = 8 \end{array}$$

$y = 8$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} 4x - y = 0 \\ 4x - 1 \times 8 = 0 \\ 4x - 8 = 0 \\ 4x = 8 \\ x = 2 \end{array}$$

答え $x = 2, y = 8$

解き方 y を消去する解き方

$$\begin{cases} -2x - y = 2 & \cdots\cdots\textcircled{1} \\ 6x + y = 2 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad -2x - y = 2 \\ \textcircled{2} \quad +) \quad 6x + y = 2 \\ \hline \quad \quad 4x = 4 \\ \quad \quad \quad x = 1 \end{array}$$

$x = 1$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -2x - y = 2 \\ -2 \times 1 - y = 2 \\ -2 - y = 2 \\ -y = 4 \\ y = -4 \end{array}$$

答え $x = 1, y = -4$

参考 y を消去する解き方

$$\begin{cases} -4x - 2y = -24 & \cdots\cdots\textcircled{1} \\ 4x - y = 0 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad -4x - 2y = -24 \\ \textcircled{2} \times 2 \quad -) \quad 8x - 2y = 0 \\ \hline \quad \quad -12x = -24 \\ \quad \quad \quad x = 2 \end{array}$$

$x = 2$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} 4x - y = 0 \\ 4 \times 2 - y = 0 \\ 8 - y = 0 \\ -y = -8 \\ y = 8 \end{array}$$

答え $x = 2, y = 8$

参考 x を消去する解き方

$$\begin{cases} -2x - y = 2 & \cdots\cdots\textcircled{1} \\ 6x + y = 2 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 3 \quad -6x - 3y = 6 \\ \textcircled{2} \quad +) \quad 6x + y = 2 \\ \hline \quad \quad -2y = 8 \\ \quad \quad \quad y = -4 \end{array}$$

$y = -4$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -2x - y = 2 \\ -2x - 1 \times (-4) = 2 \\ -2x + 4 = 2 \\ -2x = -2 \\ x = 1 \end{array}$$

答え $x = 1, y = -4$

$$\begin{cases} 2x - 2y = 10 \\ 3x - 2y = 11 \end{cases}$$

$$\begin{cases} -7x - 3y = -5 \\ 7x + 5y = 13 \end{cases}$$

解き方 y を消去する解き方

$$\begin{cases} 2x - 2y = 10 & \cdots\cdots\textcircled{1} \\ 3x - 2y = 11 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\textcircled{1} \quad 2x - 2y = 10$$

$$\textcircled{2} \quad \begin{array}{r} -) 3x - 2y = 11 \\ \hline -x \qquad \qquad = -1 \end{array}$$

$$x = 1$$

$x = 1$ を $\textcircled{1}$ に代入すると

$$2x - 2y = 10$$

$$2 \times 1 - 2y = 10$$

$$2 - 2y = 10$$

$$-2y = 8$$

$$y = -4$$

答え $x = 1, y = -4$

解き方 x を消去する解き方

$$\begin{cases} -7x - 3y = -5 & \cdots\cdots\textcircled{1} \\ 7x + 5y = 13 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\textcircled{1} \quad -7x - 3y = -5$$

$$\textcircled{2} \quad \begin{array}{r} +) 7x + 5y = 13 \\ \hline 2y = 8 \end{array}$$

$$y = 4$$

$y = 4$ を $\textcircled{1}$ に代入すると

$$-7x - 3y = -5$$

$$-7x - 3 \times 4 = -5$$

$$-7x - 12 = -5$$

$$-7x = 7$$

$$x = -1$$

答え $x = -1, y = 4$

参考 x を消去する解き方

$$\begin{cases} 2x - 2y = 10 & \cdots\cdots\textcircled{1} \\ 3x - 2y = 11 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\textcircled{1} \times 3 \quad 6x - 6y = 30$$

$$\textcircled{2} \times 2 \quad \begin{array}{r} -) 6x - 4y = 22 \\ \hline -2y = 8 \end{array}$$

$$y = -4$$

$y = -4$ を $\textcircled{1}$ に代入すると

$$2x - 2y = 10$$

$$2x - 2 \times (-4) = 10$$

$$2x + 8 = 10$$

$$2x = 2$$

$$x = 1$$

答え $x = 1, y = -4$

参考 y を消去する解き方

$$\begin{cases} -7x - 3y = -5 & \cdots\cdots\textcircled{1} \\ 7x + 5y = 13 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\textcircled{1} \times 5 \quad -35x - 15y = -25$$

$$\textcircled{2} \times 3 \quad \begin{array}{r} +) 21x + 15y = 39 \\ \hline -14x \qquad \qquad = 14 \end{array}$$

$$x = -1$$

$x = -1$ を $\textcircled{1}$ に代入すると

$$-7x - 3y = -5$$

$$-7 \times (-1) - 3y = -5$$

$$7 - 3y = -5$$

$$-3y = -12$$

$$y = 4$$

答え $x = -1, y = 4$

$$\begin{cases} -4x + y = -13 \\ x - y = 10 \end{cases}$$

$$\begin{cases} 4x - 6y = -36 \\ 4x - 2y = -4 \end{cases}$$

解き方 y を消去する解き方

$$\begin{cases} -4x + y = -13 & \dots\dots ① \\ x - y = 10 & \dots\dots ② \end{cases}$$

$$\begin{array}{r} ① \quad -4x + y = -13 \\ ② \quad +) \quad x - y = 10 \\ \hline \quad \quad -3x \quad = -3 \\ \quad \quad \quad \quad x = 1 \end{array}$$

$x = 1$ を②に代入すると

$$\begin{array}{r} x - y = 10 \\ 1 \times 1 - y = 10 \\ 1 - y = 10 \\ -y = 9 \\ y = -9 \end{array}$$

答え $x = 1, y = -9$

解き方 x を消去する解き方

$$\begin{cases} 4x - 6y = -36 & \dots\dots ① \\ 4x - 2y = -4 & \dots\dots ② \end{cases}$$

$$\begin{array}{r} ① \quad 4x - 6y = -36 \\ ② \quad -) 4x - 2y = -4 \\ \hline \quad \quad -4y = -32 \\ \quad \quad \quad \quad y = 8 \end{array}$$

$y = 8$ を②に代入すると

$$\begin{array}{r} 4x - 2y = -4 \\ 4x - 2 \times 8 = -4 \\ 4x - 16 = -4 \\ 4x = 12 \\ x = 3 \end{array}$$

答え $x = 3, y = 8$

参考 x を消去する解き方

$$\begin{cases} -4x + y = -13 & \dots\dots ① \\ x - y = 10 & \dots\dots ② \end{cases}$$

$$\begin{array}{r} ① \quad -4x + y = -13 \\ ② \times 4 \quad +) 4x - 4y = 40 \\ \hline \quad \quad -3y = 27 \\ \quad \quad \quad \quad y = -9 \end{array}$$

$y = -9$ を②に代入すると

$$\begin{array}{r} x - y = 10 \\ x - 1 \times (-9) = 10 \\ x + 9 = 10 \\ x = 1 \end{array}$$

答え $x = 1, y = -9$

参考 y を消去する解き方

$$\begin{cases} 4x - 6y = -36 & \dots\dots ① \\ 4x - 2y = -4 & \dots\dots ② \end{cases}$$

$$\begin{array}{r} ① \quad 4x - 6y = -36 \\ ② \times 3 \quad -) 12x - 6y = -12 \\ \hline \quad \quad -8x \quad = -24 \\ \quad \quad \quad \quad x = 3 \end{array}$$

$x = 3$ を②に代入すると

$$\begin{array}{r} 4x - 2y = -4 \\ 4 \times 3 - 2y = -4 \\ 12 - 2y = -4 \\ -2y = -16 \\ y = 8 \end{array}$$

答え $x = 3, y = 8$

$$\begin{cases} -3x - 6y = -6 \\ -3x + y = 8 \end{cases}$$

$$\begin{cases} -4x + 4y = 12 \\ 4x + 4y = -28 \end{cases}$$

解き方 x を消去する解き方

$$\begin{cases} -3x - 6y = -6 & \cdots\cdots\text{①} \\ -3x + y = 8 & \cdots\cdots\text{②} \end{cases}$$

$$\text{①} \quad -3x - 6y = -6$$

$$\text{②} \quad \begin{array}{r} -) -3x + y = 8 \\ \hline -7y = -14 \end{array}$$

$$y = 2$$

$y = 2$ を②に代入すると

$$-3x + y = 8$$

$$-3x + 1 \times 2 = 8$$

$$-3x + 2 = 8$$

$$-3x = 6$$

$$x = -2$$

答え $x = -2, y = 2$

参考 y を消去する解き方

$$\begin{cases} -3x - 6y = -6 & \cdots\cdots\text{①} \\ -3x + y = 8 & \cdots\cdots\text{②} \end{cases}$$

$$\text{①} \quad -3x - 6y = -6$$

$$\text{②} \times 6 \quad \begin{array}{r} +) -18x + 6y = 48 \\ \hline -21x = 42 \end{array}$$

$$x = -2$$

$x = -2$ を②に代入すると

$$-3x + y = 8$$

$$-3 \times (-2) + y = 8$$

$$6 + y = 8$$

$$y = 2$$

答え $x = -2, y = 2$

解き方 1 x を消去する解き方

$$\begin{cases} -4x + 4y = 12 & \cdots\cdots\text{①} \\ 4x + 4y = -28 & \cdots\cdots\text{②} \end{cases}$$

$$\text{①} \quad -4x + 4y = 12$$

$$\text{②} \quad \begin{array}{r} +) 4x + 4y = -28 \\ \hline 8y = -16 \end{array}$$

$$y = -2$$

$y = -2$ を①に代入すると

$$-4x + 4y = 12$$

$$-4x + 4 \times (-2) = 12$$

$$-4x - 8 = 12$$

$$-4x = 20$$

$$x = -5$$

答え $x = -5, y = -2$

解き方 2 y を消去する解き方

$$\begin{cases} -4x + 4y = 12 & \cdots\cdots\text{①} \\ 4x + 4y = -28 & \cdots\cdots\text{②} \end{cases}$$

$$\text{①} \quad -4x + 4y = 12$$

$$\text{②} \quad \begin{array}{r} -) 4x + 4y = -28 \\ \hline -8x = 40 \end{array}$$

$$x = -5$$

$x = -5$ を①に代入すると

$$-4x + 4y = 12$$

$$-4 \times (-5) + 4y = 12$$

$$20 + 4y = 12$$

$$4y = -8$$

$$y = -2$$

答え $x = -5, y = -2$

$$\begin{cases} -4x + y = 2 \\ -4x + 6y = -28 \end{cases}$$

$$\begin{cases} -2x + y = 6 \\ 2x + 8y = 30 \end{cases}$$

解き方 x を消去する解き方

$$\begin{cases} -4x + y = 2 & \cdots\cdots\textcircled{1} \\ -4x + 6y = -28 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad -4x + y = 2 \\ \textcircled{2} \quad -) -4x + 6y = -28 \\ \hline \quad \quad -5y = 30 \\ \quad \quad \quad y = -6 \end{array}$$

$y = -6$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -4x + y = 2 \\ -4x + 1 \times (-6) = 2 \\ -4x - 6 = 2 \\ -4x = 8 \\ x = -2 \end{array}$$

答え $x = -2, y = -6$

解き方 x を消去する解き方

$$\begin{cases} -2x + y = 6 & \cdots\cdots\textcircled{1} \\ 2x + 8y = 30 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad -2x + y = 6 \\ \textcircled{2} \quad +) 2x + 8y = 30 \\ \hline \quad \quad \quad 9y = 36 \\ \quad \quad \quad y = 4 \end{array}$$

$y = 4$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -2x + y = 6 \\ -2x + 1 \times 4 = 6 \\ -2x + 4 = 6 \\ -2x = 2 \\ x = -1 \end{array}$$

答え $x = -1, y = 4$

参考 y を消去する解き方

$$\begin{cases} -4x + y = 2 & \cdots\cdots\textcircled{1} \\ -4x + 6y = -28 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 6 \quad -24x + 6y = 12 \\ \textcircled{2} \quad -) -4x + 6y = -28 \\ \hline \quad \quad -20x = 40 \\ \quad \quad \quad x = -2 \end{array}$$

$x = -2$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -4x + y = 2 \\ -4 \times (-2) + y = 2 \\ 8 + y = 2 \\ y = -6 \end{array}$$

答え $x = -2, y = -6$

参考 y を消去する解き方

$$\begin{cases} -2x + y = 6 & \cdots\cdots\textcircled{1} \\ 2x + 8y = 30 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 8 \quad -16x + 8y = 48 \\ \textcircled{2} \quad -) 2x + 8y = 30 \\ \hline \quad \quad -18x = 18 \\ \quad \quad \quad x = -1 \end{array}$$

$x = -1$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -2x + y = 6 \\ -2 \times (-1) + y = 6 \\ 2 + y = 6 \\ y = 4 \end{array}$$

答え $x = -1, y = 4$

$$\begin{cases} -x - 3y = -24 \\ -x + y = -4 \end{cases}$$

$$\begin{cases} -6x + 4y = 24 \\ 6x - 8y = -36 \end{cases}$$

解き方 x を消去する解き方

$$\begin{cases} -x - 3y = -24 & \cdots\cdots\text{①} \\ -x + y = -4 & \cdots\cdots\text{②} \end{cases}$$

$$\text{①} \quad -x - 3y = -24$$

$$\text{②} \quad \begin{array}{r} -) -x + y = -4 \\ \hline -4y = -20 \end{array}$$

$$y = 5$$

$y = 5$ を②に代入すると

$$-x + y = -4$$

$$-x + 1 \times 5 = -4$$

$$-x + 5 = -4$$

$$-x = -9$$

$$x = 9$$

答え $x = 9, y = 5$

解き方 x を消去する解き方

$$\begin{cases} -6x + 4y = 24 & \cdots\cdots\text{①} \\ 6x - 8y = -36 & \cdots\cdots\text{②} \end{cases}$$

$$\text{①} \quad -6x + 4y = 24$$

$$\text{②} \quad \begin{array}{r} +) 6x - 8y = -36 \\ \hline -4y = -12 \end{array}$$

$$y = 3$$

$y = 3$ を①に代入すると

$$-6x + 4y = 24$$

$$-6x + 4 \times 3 = 24$$

$$-6x + 12 = 24$$

$$-6x = 12$$

$$x = -2$$

答え $x = -2, y = 3$

参考 y を消去する解き方

$$\begin{cases} -x - 3y = -24 & \cdots\cdots\text{①} \\ -x + y = -4 & \cdots\cdots\text{②} \end{cases}$$

$$\text{①} \quad -x - 3y = -24$$

$$\text{②} \times 3 \quad \begin{array}{r} +) -3x + 3y = -12 \\ \hline -4x = -36 \end{array}$$

$$x = 9$$

$x = 9$ を②に代入すると

$$-x + y = -4$$

$$-1 \times 9 + y = -4$$

$$-9 + y = -4$$

$$y = 5$$

答え $x = 9, y = 5$

参考 y を消去する解き方

$$\begin{cases} -6x + 4y = 24 & \cdots\cdots\text{①} \\ 6x - 8y = -36 & \cdots\cdots\text{②} \end{cases}$$

$$\text{①} \times 2 \quad -12x + 8y = 48$$

$$\text{②} \quad \begin{array}{r} +) 6x - 8y = -36 \\ \hline -6x = 12 \end{array}$$

$$x = -2$$

$x = -2$ を①に代入すると

$$-6x + 4y = 24$$

$$-6 \times (-2) + 4y = 24$$

$$12 + 4y = 24$$

$$4y = 12$$

$$y = 3$$

答え $x = -2, y = 3$

$$\begin{cases} -4x + 5y = -23 \\ -x - 5y = -12 \end{cases}$$

$$\begin{cases} -8x + 2y = 26 \\ -x + 2y = 5 \end{cases}$$

解き方 y を消去する解き方

$$\begin{cases} -4x + 5y = -23 & \dots\dots ① \\ -x - 5y = -12 & \dots\dots ② \end{cases}$$

$$① \quad -4x + 5y = -23$$

$$② \quad \begin{array}{r} +) -x - 5y = -12 \\ \hline -5x \quad \quad = -35 \end{array}$$

$$x = 7$$

$x = 7$ を②に代入すると

$$-x - 5y = -12$$

$$-1 \times 7 - 5y = -12$$

$$-7 - 5y = -12$$

$$-5y = -5$$

$$y = 1$$

答え $x = 7, y = 1$

解き方 y を消去する解き方

$$\begin{cases} -8x + 2y = 26 & \dots\dots ① \\ -x + 2y = 5 & \dots\dots ② \end{cases}$$

$$① \quad -8x + 2y = 26$$

$$② \quad \begin{array}{r} -) -x + 2y = 5 \\ \hline -7x \quad \quad = 21 \end{array}$$

$$x = -3$$

$x = -3$ を②に代入すると

$$-x + 2y = 5$$

$$-1 \times (-3) + 2y = 5$$

$$3 + 2y = 5$$

$$2y = 2$$

$$y = 1$$

答え $x = -3, y = 1$

参考 x を消去する解き方

$$\begin{cases} -4x + 5y = -23 & \dots\dots ① \\ -x - 5y = -12 & \dots\dots ② \end{cases}$$

$$① \quad -4x + 5y = -23$$

$$② \times 4 \quad \begin{array}{r} -) -4x - 20y = -48 \\ \hline 25y = 25 \end{array}$$

$$y = 1$$

$y = 1$ を②に代入すると

$$-x - 5y = -12$$

$$-x - 5 \times 1 = -12$$

$$-x - 5 = -12$$

$$-x = -7$$

$$x = 7$$

答え $x = 7, y = 1$

参考 x を消去する解き方

$$\begin{cases} -8x + 2y = 26 & \dots\dots ① \\ -x + 2y = 5 & \dots\dots ② \end{cases}$$

$$① \quad -8x + 2y = 26$$

$$② \times 8 \quad \begin{array}{r} -) -8x + 16y = 40 \\ \hline -14y = -14 \end{array}$$

$$y = 1$$

$y = 1$ を②に代入すると

$$-x + 2y = 5$$

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

$$-x + 2 = 5$$

$$-x = 3$$

$$x = -3$$

答え $x = -3, y = 1$

$$\begin{cases} -6x - 4y = 24 \\ 3x + 4y = -18 \end{cases}$$

$$\begin{cases} 3x - y = 1 \\ 3x + 6y = -48 \end{cases}$$

解き方 y を消去する解き方

$$\begin{cases} -6x - 4y = 24 & \cdots\cdots\textcircled{1} \\ 3x + 4y = -18 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\textcircled{1} \quad -6x - 4y = 24$$

$$\textcircled{2} \quad \begin{array}{r} +) 3x + 4y = -18 \\ \hline -3x \quad \quad = 6 \end{array}$$

$$x = -2$$

$x = -2$ を $\textcircled{2}$ に代入すると

$$3x + 4y = -18$$

$$3 \times (-2) + 4y = -18$$

$$-6 + 4y = -18$$

$$4y = -12$$

$$y = -3$$

答え $x = -2, y = -3$

解き方 x を消去する解き方

$$\begin{cases} 3x - y = 1 & \cdots\cdots\textcircled{1} \\ 3x + 6y = -48 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\textcircled{1} \quad 3x - y = 1$$

$$\textcircled{2} \quad \begin{array}{r} -) 3x + 6y = -48 \\ \hline -7y = 49 \end{array}$$

$$y = -7$$

$y = -7$ を $\textcircled{1}$ に代入すると

$$3x - y = 1$$

$$3x - 1 \times (-7) = 1$$

$$3x + 7 = 1$$

$$3x = -6$$

$$x = -2$$

答え $x = -2, y = -7$

参考 x を消去する解き方

$$\begin{cases} -6x - 4y = 24 & \cdots\cdots\textcircled{1} \\ 3x + 4y = -18 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\textcircled{1} \quad -6x - 4y = 24$$

$$\textcircled{2} \times 2 \quad \begin{array}{r} +) 6x + 8y = -36 \\ \hline 4y = -12 \end{array}$$

$$y = -3$$

$y = -3$ を $\textcircled{2}$ に代入すると

$$3x + 4y = -18$$

$$3x + 4 \times (-3) = -18$$

$$3x - 12 = -18$$

$$3x = -6$$

$$x = -2$$

答え $x = -2, y = -3$

参考 y を消去する解き方

$$\begin{cases} 3x - y = 1 & \cdots\cdots\textcircled{1} \\ 3x + 6y = -48 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\textcircled{1} \times 6 \quad 18x - 6y = 6$$

$$\textcircled{2} \quad \begin{array}{r} +) 3x + 6y = -48 \\ \hline 21x \quad \quad = -42 \end{array}$$

$$x = -2$$

$x = -2$ を $\textcircled{1}$ に代入すると

$$3x - y = 1$$

$$3 \times (-2) - y = 1$$

$$-6 - y = 1$$

$$-y = 7$$

$$y = -7$$

答え $x = -2, y = -7$

$$\begin{cases} -4x + 2y = -10 \\ 4x - 3y = 5 \end{cases}$$

$$\begin{cases} -5x + 7y = 2 \\ 5x - y = 4 \end{cases}$$

解き方 x を消去する解き方

$$\begin{cases} -4x + 2y = -10 & \cdots\cdots\textcircled{1} \\ 4x - 3y = 5 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad -4x + 2y = -10 \\ \textcircled{2} \quad +) \quad 4x - 3y = 5 \\ \hline \quad \quad -y = -5 \\ \quad \quad \quad y = 5 \end{array}$$

$y = 5$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -4x + 2y = -10 \\ -4x + 2 \times 5 = -10 \\ -4x + 10 = -10 \\ -4x = -20 \\ x = 5 \end{array}$$

答え $x = 5, y = 5$

解き方 x を消去する解き方

$$\begin{cases} -5x + 7y = 2 & \cdots\cdots\textcircled{1} \\ 5x - y = 4 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad -5x + 7y = 2 \\ \textcircled{2} \quad +) \quad 5x - y = 4 \\ \hline \quad \quad 6y = 6 \\ \quad \quad \quad y = 1 \end{array}$$

$y = 1$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} 5x - y = 4 \\ 5x - 1 \times 1 = 4 \\ 5x - 1 = 4 \\ 5x = 5 \\ x = 1 \end{array}$$

答え $x = 1, y = 1$

参考 y を消去する解き方

$$\begin{cases} -4x + 2y = -10 & \cdots\cdots\textcircled{1} \\ 4x - 3y = 5 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 3 \quad -12x + 6y = -30 \\ \textcircled{2} \times 2 \quad +) \quad 8x - 6y = 10 \\ \hline \quad \quad -4x = -20 \\ \quad \quad \quad x = 5 \end{array}$$

$x = 5$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} 4x - 3y = 5 \\ 4 \times 5 - 3y = 5 \\ 20 - 3y = 5 \\ -3y = -15 \\ y = 5 \end{array}$$

答え $x = 5, y = 5$

参考 y を消去する解き方

$$\begin{cases} -5x + 7y = 2 & \cdots\cdots\textcircled{1} \\ 5x - y = 4 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad -5x + 7y = 2 \\ \textcircled{2} \times 7 \quad +) \quad 35x - 7y = 28 \\ \hline \quad \quad 30x = 30 \\ \quad \quad \quad x = 1 \end{array}$$

$x = 1$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} 5x - y = 4 \\ 5 \times 1 - y = 4 \\ 5 - y = 4 \\ -y = -1 \\ y = 1 \end{array}$$

答え $x = 1, y = 1$

$$\begin{cases} 5x + 4y = -5 \\ 5x + 8y = -25 \end{cases}$$

$$\begin{cases} -2x - 6y = -4 \\ -2x - 4y = -6 \end{cases}$$

解き方 x を消去する解き方

$$\begin{cases} 5x + 4y = -5 & \cdots\cdots\textcircled{1} \\ 5x + 8y = -25 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad 5x + 4y = -5 \\ \textcircled{2} \quad -) 5x + 8y = -25 \\ \hline \quad \quad -4y = 20 \\ \quad \quad \quad y = -5 \end{array}$$

$y = -5$ を①に代入すると

$$\begin{array}{r} 5x + 4y = -5 \\ 5x + 4 \times (-5) = -5 \\ 5x - 20 = -5 \\ 5x = 15 \\ x = 3 \end{array}$$

答え $x = 3, y = -5$

解き方 x を消去する解き方

$$\begin{cases} -2x - 6y = -4 & \cdots\cdots\textcircled{1} \\ -2x - 4y = -6 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad -2x - 6y = -4 \\ \textcircled{2} \quad -) -2x - 4y = -6 \\ \hline \quad \quad -2y = 2 \\ \quad \quad \quad y = -1 \end{array}$$

$y = -1$ を①に代入すると

$$\begin{array}{r} -2x - 6y = -4 \\ -2x - 6 \times (-1) = -4 \\ -2x + 6 = -4 \\ -2x = -10 \\ x = 5 \end{array}$$

答え $x = 5, y = -1$

参考 y を消去する解き方

$$\begin{cases} 5x + 4y = -5 & \cdots\cdots\textcircled{1} \\ 5x + 8y = -25 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 2 \quad 10x + 8y = -10 \\ \textcircled{2} \quad -) 5x + 8y = -25 \\ \hline \quad \quad 5x = 15 \\ \quad \quad \quad x = 3 \end{array}$$

$x = 3$ を①に代入すると

$$\begin{array}{r} 5x + 4y = -5 \\ 5 \times 3 + 4y = -5 \\ 15 + 4y = -5 \\ 4y = -20 \\ y = -5 \end{array}$$

答え $x = 3, y = -5$

参考 y を消去する解き方

$$\begin{cases} -2x - 6y = -4 & \cdots\cdots\textcircled{1} \\ -2x - 4y = -6 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 2 \quad -4x - 12y = -8 \\ \textcircled{2} \times 3 \quad -) -6x - 12y = -18 \\ \hline \quad \quad 2x = 10 \\ \quad \quad \quad x = 5 \end{array}$$

$x = 5$ を①に代入すると

$$\begin{array}{r} -2x - 6y = -4 \\ -2 \times 5 - 6y = -4 \\ -10 - 6y = -4 \\ -6y = 6 \\ y = -1 \end{array}$$

答え $x = 5, y = -1$

$$\begin{cases} -3x + y = -3 \\ 3x - 5y = -33 \end{cases}$$

$$\begin{cases} -8x - 3y = 11 \\ -3x + 3y = 0 \end{cases}$$

解き方 x を消去する解き方

$$\begin{cases} -3x + y = -3 & \cdots\cdots\text{①} \\ 3x - 5y = -33 & \cdots\cdots\text{②} \end{cases}$$

$$\begin{array}{r} \text{①} \quad -3x + y = -3 \\ \text{②} \quad +) \quad 3x - 5y = -33 \\ \hline \quad \quad -4y = -36 \\ \quad \quad \quad y = 9 \end{array}$$

$y = 9$ を①に代入すると

$$\begin{array}{r} -3x + y = -3 \\ -3x + 1 \times 9 = -3 \\ -3x + 9 = -3 \\ -3x = -12 \\ x = 4 \end{array}$$

答え $x = 4, y = 9$

解き方 y を消去する解き方

$$\begin{cases} -8x - 3y = 11 & \cdots\cdots\text{①} \\ -3x + 3y = 0 & \cdots\cdots\text{②} \end{cases}$$

$$\begin{array}{r} \text{①} \quad -8x - 3y = 11 \\ \text{②} \quad +) \quad -3x + 3y = 0 \\ \hline \quad \quad -11x = 11 \\ \quad \quad \quad x = -1 \end{array}$$

$x = -1$ を②に代入すると

$$\begin{array}{r} -3x + 3y = 0 \\ -3 \times (-1) + 3y = 0 \\ 3 + 3y = 0 \\ 3y = -3 \\ y = -1 \end{array}$$

答え $x = -1, y = -1$

参考 y を消去する解き方

$$\begin{cases} -3x + y = -3 & \cdots\cdots\text{①} \\ 3x - 5y = -33 & \cdots\cdots\text{②} \end{cases}$$

$$\begin{array}{r} \text{①} \times 5 \quad -15x + 5y = -15 \\ \text{②} \quad +) \quad 3x - 5y = -33 \\ \hline \quad \quad -12x = -48 \\ \quad \quad \quad x = 4 \end{array}$$

$x = 4$ を①に代入すると

$$\begin{array}{r} -3x + y = -3 \\ -3 \times 4 + y = -3 \\ -12 + y = -3 \\ y = 9 \end{array}$$

答え $x = 4, y = 9$

参考 x を消去する解き方

$$\begin{cases} -8x - 3y = 11 & \cdots\cdots\text{①} \\ -3x + 3y = 0 & \cdots\cdots\text{②} \end{cases}$$

$$\begin{array}{r} \text{①} \times 3 \quad -24x - 9y = 33 \\ \text{②} \times 8 \quad -) \quad -24x + 24y = 0 \\ \hline \quad \quad -33y = 33 \\ \quad \quad \quad y = -1 \end{array}$$

$y = -1$ を②に代入すると

$$\begin{array}{r} -3x + 3y = 0 \\ -3x + 3 \times (-1) = 0 \\ -3x - 3 = 0 \\ -3x = 3 \\ x = -1 \end{array}$$

答え $x = -1, y = -1$

問題

次の連立方程式を加減法で解いてみましょう。

$$\begin{cases} -2x + y = 10 \\ 6x + 3y = 6 \end{cases}$$

$$\begin{cases} -6x - 4y = -38 \\ 2x + 2y = 16 \end{cases}$$

解き方1 x を消去する解き方

$$\begin{cases} -2x + y = 10 & \cdots\cdots\textcircled{1} \\ 6x + 3y = 6 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 3 \quad -6x + 3y = 30 \\ \textcircled{2} \quad \quad +) \quad 6x + 3y = 6 \\ \hline \quad \quad \quad 6y = 36 \\ \quad \quad \quad y = 6 \end{array}$$

$y = 6$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -2x + y = 10 \\ -2x + 1 \times 6 = 10 \\ -2x + 6 = 10 \\ -2x = 4 \\ x = -2 \end{array}$$

答え $x = -2, y = 6$

解き方2 y を消去する解き方

$$\begin{cases} -2x + y = 10 & \cdots\cdots\textcircled{1} \\ 6x + 3y = 6 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 3 \quad -6x + 3y = 30 \\ \textcircled{2} \quad \quad -) \quad 6x + 3y = 6 \\ \hline \quad \quad \quad -12x = 24 \\ \quad \quad \quad x = -2 \end{array}$$

$x = -2$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -2x + y = 10 \\ -2 \times (-2) + y = 10 \\ 4 + y = 10 \\ y = 6 \end{array}$$

答え $x = -2, y = 6$

解き方1 x を消去する解き方

$$\begin{cases} -6x - 4y = -38 & \cdots\cdots\textcircled{1} \\ 2x + 2y = 16 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad \quad -6x - 4y = -38 \\ \textcircled{2} \times 3 \quad +) \quad 6x + 6y = 48 \\ \hline \quad \quad \quad 2y = 10 \\ \quad \quad \quad y = 5 \end{array}$$

$y = 5$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} 2x + 2y = 16 \\ 2x + 2 \times 5 = 16 \\ 2x + 10 = 16 \\ 2x = 6 \\ x = 3 \end{array}$$

答え $x = 3, y = 5$

解き方2 y を消去する解き方

$$\begin{cases} -6x - 4y = -38 & \cdots\cdots\textcircled{1} \\ 2x + 2y = 16 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad \quad -6x - 4y = -38 \\ \textcircled{2} \times 2 \quad +) \quad 4x + 4y = 32 \\ \hline \quad \quad \quad -2x = -6 \\ \quad \quad \quad x = 3 \end{array}$$

$x = 3$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} 2x + 2y = 16 \\ 2 \times 3 + 2y = 16 \\ 6 + 2y = 16 \\ 2y = 10 \\ y = 5 \end{array}$$

答え $x = 3, y = 5$

$$\begin{cases} 6x + 4y = 4 \\ 7x + 5y = 4 \end{cases}$$

$$\begin{cases} 3x - 4y = 11 \\ 6x + 8y = -10 \end{cases}$$

解き方1 x を消去する解き方

$$\begin{cases} 6x + 4y = 4 & \cdots\cdots\textcircled{1} \\ 7x + 5y = 4 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 7 \quad 42x + 28y = 28 \\ \textcircled{2} \times 6 \quad -) 42x + 30y = 24 \\ \hline \quad \quad \quad -2y = 4 \\ \quad \quad \quad y = -2 \end{array}$$

$y = -2$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} 6x + 4y = 4 \\ 6x + 4 \times (-2) = 4 \\ 6x - 8 = 4 \\ 6x = 12 \\ x = 2 \end{array}$$

答え $x = 2, y = -2$

解き方2 y を消去する解き方

$$\begin{cases} 6x + 4y = 4 & \cdots\cdots\textcircled{1} \\ 7x + 5y = 4 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 5 \quad 30x + 20y = 20 \\ \textcircled{2} \times 4 \quad -) 28x + 20y = 16 \\ \hline \quad \quad \quad 2x \quad = 4 \\ \quad \quad \quad x = 2 \end{array}$$

$x = 2$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} 6x + 4y = 4 \\ 6 \times 2 + 4y = 4 \\ 12 + 4y = 4 \\ 4y = -8 \\ y = -2 \end{array}$$

答え $x = 2, y = -2$

解き方1 x を消去する解き方

$$\begin{cases} 3x - 4y = 11 & \cdots\cdots\textcircled{1} \\ 6x + 8y = -10 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 2 \quad 6x - 8y = 22 \\ \textcircled{2} \quad \quad -) 6x + 8y = -10 \\ \hline \quad \quad \quad -16y = 32 \\ \quad \quad \quad y = -2 \end{array}$$

$y = -2$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} 3x - 4y = 11 \\ 3x - 4 \times (-2) = 11 \\ 3x + 8 = 11 \\ 3x = 3 \\ x = 1 \end{array}$$

答え $x = 1, y = -2$

解き方2 y を消去する解き方

$$\begin{cases} 3x - 4y = 11 & \cdots\cdots\textcircled{1} \\ 6x + 8y = -10 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 2 \quad 6x - 8y = 22 \\ \textcircled{2} \quad \quad +) 6x + 8y = -10 \\ \hline \quad \quad \quad 12x \quad = 12 \\ \quad \quad \quad x = 1 \end{array}$$

$x = 1$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} 3x - 4y = 11 \\ 3 \times 1 - 4y = 11 \\ 3 - 4y = 11 \\ -4y = 8 \\ y = -2 \end{array}$$

答え $x = 1, y = -2$

$$\begin{cases} x + y = -2 \\ 6x + 9y = -27 \end{cases}$$

$$\begin{cases} x - 6y = 0 \\ 3x - 9y = -9 \end{cases}$$

解き方1 x を消去する解き方

$$\begin{cases} x + y = -2 & \cdots\cdots\textcircled{1} \\ 6x + 9y = -27 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 6 \quad 6x + 6y = -12 \\ \textcircled{2} \quad \quad -) 6x + 9y = -27 \\ \hline \quad \quad \quad -3y = 15 \\ \quad \quad \quad y = -5 \end{array}$$

$y = -5$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} x + y = -2 \\ x + 1 \times (-5) = -2 \\ x - 5 = -2 \\ x = 3 \end{array}$$

答え $x = 3, y = -5$

解き方2 y を消去する解き方

$$\begin{cases} x + y = -2 & \cdots\cdots\textcircled{1} \\ 6x + 9y = -27 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 9 \quad 9x + 9y = -18 \\ \textcircled{2} \quad \quad -) 6x + 9y = -27 \\ \hline \quad \quad \quad 3x = 9 \\ \quad \quad \quad x = 3 \end{array}$$

$x = 3$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} x + y = -2 \\ 1 \times 3 + y = -2 \\ 3 + y = -2 \\ y = -5 \end{array}$$

答え $x = 3, y = -5$

解き方1 x を消去する解き方

$$\begin{cases} x - 6y = 0 & \cdots\cdots\textcircled{1} \\ 3x - 9y = -9 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 3 \quad 3x - 18y = 0 \\ \textcircled{2} \quad \quad -) 3x - 9y = -9 \\ \hline \quad \quad \quad -9y = 9 \\ \quad \quad \quad y = -1 \end{array}$$

$y = -1$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} x - 6y = 0 \\ x - 6 \times (-1) = 0 \\ x + 6 = 0 \\ x = -6 \end{array}$$

答え $x = -6, y = -1$

解き方2 y を消去する解き方

$$\begin{cases} x - 6y = 0 & \cdots\cdots\textcircled{1} \\ 3x - 9y = -9 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 3 \quad 3x - 18y = 0 \\ \textcircled{2} \times 2 \quad -) 6x - 18y = -18 \\ \hline \quad \quad \quad -3x = 18 \\ \quad \quad \quad x = -6 \end{array}$$

$x = -6$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} x - 6y = 0 \\ 1 \times (-6) - 6y = 0 \\ -6 - 6y = 0 \\ -6y = 6 \\ y = -1 \end{array}$$

答え $x = -6, y = -1$

$$\begin{cases} x + y = 3 \\ 8x + 2y = -18 \end{cases}$$

$$\begin{cases} -9x + 6y = 3 \\ -4x + 3y = 3 \end{cases}$$

解き方1 x を消去する解き方

$$\begin{cases} x + y = 3 & \cdots\cdots\textcircled{1} \\ 8x + 2y = -18 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 8 \quad 8x + 8y = 24 \\ \textcircled{2} \quad \quad -) 8x + 2y = -18 \\ \hline \quad \quad \quad 6y = 42 \\ \quad \quad \quad y = 7 \end{array}$$

$y = 7$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} x + y = 3 \\ x + 1 \times 7 = 3 \\ x + 7 = 3 \\ x = -4 \end{array}$$

答え $x = -4, y = 7$

解き方2 y を消去する解き方

$$\begin{cases} x + y = 3 & \cdots\cdots\textcircled{1} \\ 8x + 2y = -18 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 2 \quad 2x + 2y = 6 \\ \textcircled{2} \quad \quad -) 8x + 2y = -18 \\ \hline \quad \quad \quad -6x \quad = 24 \\ \quad \quad \quad x = -4 \end{array}$$

$x = -4$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} x + y = 3 \\ 1 \times (-4) + y = 3 \\ -4 + y = 3 \\ y = 7 \end{array}$$

答え $x = -4, y = 7$

解き方1 x を消去する解き方

$$\begin{cases} -9x + 6y = 3 & \cdots\cdots\textcircled{1} \\ -4x + 3y = 3 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 4 \quad -36x + 24y = 12 \\ \textcircled{2} \times 9 \quad -) -36x + 27y = 27 \\ \hline \quad \quad \quad -3y = -15 \\ \quad \quad \quad y = 5 \end{array}$$

$y = 5$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} -4x + 3y = 3 \\ -4x + 3 \times 5 = 3 \\ -4x + 15 = 3 \\ -4x = -12 \\ x = 3 \end{array}$$

答え $x = 3, y = 5$

解き方2 y を消去する解き方

$$\begin{cases} -9x + 6y = 3 & \cdots\cdots\textcircled{1} \\ -4x + 3y = 3 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad \quad -9x + 6y = 3 \\ \textcircled{2} \times 2 \quad -) -8x + 6y = 6 \\ \hline \quad \quad \quad -x \quad = -3 \\ \quad \quad \quad x = 3 \end{array}$$

$x = 3$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} -4x + 3y = 3 \\ -4 \times 3 + 3y = 3 \\ -12 + 3y = 3 \\ 3y = 15 \\ y = 5 \end{array}$$

答え $x = 3, y = 5$

$$\begin{cases} -6x + 5y = 14 \\ 2x + y = 6 \end{cases}$$

$$\begin{cases} -2x + 2y = -8 \\ -x - y = 8 \end{cases}$$

解き方1 x を消去する解き方

$$\begin{cases} -6x + 5y = 14 & \cdots\cdots\textcircled{1} \\ 2x + y = 6 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \qquad -6x + 5y = 14 \\ \textcircled{2} \times 3 \quad +) \quad 6x + 3y = 18 \\ \hline \qquad \qquad 8y = 32 \\ \qquad \qquad y = 4 \end{array}$$

$y = 4$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} 2x + y = 6 \\ 2x + 1 \times 4 = 6 \\ 2x + 4 = 6 \\ 2x = 2 \\ x = 1 \end{array}$$

答え $x = 1, y = 4$

解き方2 y を消去する解き方

$$\begin{cases} -6x + 5y = 14 & \cdots\cdots\textcircled{1} \\ 2x + y = 6 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \qquad -6x + 5y = 14 \\ \textcircled{2} \times 5 \quad -) \quad 10x + 5y = 30 \\ \hline -16x \qquad = -16 \\ \qquad \qquad x = 1 \end{array}$$

$x = 1$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} 2x + y = 6 \\ 2 \times 1 + y = 6 \\ 2 + y = 6 \\ y = 4 \end{array}$$

答え $x = 1, y = 4$

解き方1 x を消去する解き方

$$\begin{cases} -2x + 2y = -8 & \cdots\cdots\textcircled{1} \\ -x - y = 8 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \qquad -2x + 2y = -8 \\ \textcircled{2} \times 2 \quad -) \quad -2x - 2y = 16 \\ \hline \qquad \qquad 4y = -24 \\ \qquad \qquad y = -6 \end{array}$$

$y = -6$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} -x - y = 8 \\ -x - 1 \times (-6) = 8 \\ -x + 6 = 8 \\ -x = 2 \\ x = -2 \end{array}$$

答え $x = -2, y = -6$

解き方2 y を消去する解き方

$$\begin{cases} -2x + 2y = -8 & \cdots\cdots\textcircled{1} \\ -x - y = 8 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \qquad -2x + 2y = -8 \\ \textcircled{2} \times 2 \quad +) \quad -2x - 2y = 16 \\ \hline -4x \qquad = 8 \\ \qquad \qquad x = -2 \end{array}$$

$x = -2$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} -x - y = 8 \\ -1 \times (-2) - y = 8 \\ 2 - y = 8 \\ -y = 6 \\ y = -6 \end{array}$$

答え $x = -2, y = -6$

$$\begin{cases} -4x + 3y = -21 \\ 8x + 6y = 6 \end{cases}$$

$$\begin{cases} -6x + 9y = 21 \\ 3x + 3y = 12 \end{cases}$$

解き方1 x を消去する解き方

$$\begin{cases} -4x + 3y = -21 & \cdots\cdots\textcircled{1} \\ 8x + 6y = 6 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 2 \quad -8x + 6y = -42 \\ \textcircled{2} \quad \quad +) \quad 8x + 6y = \quad 6 \\ \hline \quad \quad \quad 12y = -36 \\ \quad \quad \quad \quad y = -3 \end{array}$$

$y = -3$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} 8x + 6y = 6 \\ 8x + 6 \times (-3) = 6 \\ 8x - 18 = 6 \\ 8x = 24 \\ x = 3 \end{array}$$

答え $x = 3, y = -3$

解き方1 x を消去する解き方

$$\begin{cases} -6x + 9y = 21 & \cdots\cdots\textcircled{1} \\ 3x + 3y = 12 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad \quad -6x + 9y = 21 \\ \textcircled{2} \times 2 \quad +) \quad 6x + 6y = 24 \\ \hline \quad \quad \quad 15y = 45 \\ \quad \quad \quad \quad y = 3 \end{array}$$

$y = 3$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} 3x + 3y = 12 \\ 3x + 3 \times 3 = 12 \\ 3x + 9 = 12 \\ 3x = 3 \\ x = 1 \end{array}$$

答え $x = 1, y = 3$

解き方2 y を消去する解き方

$$\begin{cases} -4x + 3y = -21 & \cdots\cdots\textcircled{1} \\ 8x + 6y = 6 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 2 \quad -8x + 6y = -42 \\ \textcircled{2} \quad \quad -) \quad 8x + 6y = \quad 6 \\ \hline \quad \quad \quad -16x \quad = -48 \\ \quad \quad \quad \quad x = 3 \end{array}$$

$x = 3$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -4x + 3y = -21 \\ -4 \times 3 + 3y = -21 \\ -12 + 3y = -21 \\ 3y = -9 \\ y = -3 \end{array}$$

答え $x = 3, y = -3$

解き方2 y を消去する解き方

$$\begin{cases} -6x + 9y = 21 & \cdots\cdots\textcircled{1} \\ 3x + 3y = 12 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad \quad -6x + 9y = 21 \\ \textcircled{2} \times 3 \quad -) \quad 9x + 9y = 36 \\ \hline \quad \quad \quad -15x \quad = -15 \\ \quad \quad \quad \quad x = 1 \end{array}$$

$x = 1$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} 3x + 3y = 12 \\ 3 \times 1 + 3y = 12 \\ 3 + 3y = 12 \\ 3y = 9 \\ y = 3 \end{array}$$

答え $x = 1, y = 3$

$$\begin{cases} -6x + 2y = 4 \\ 9x - y = -20 \end{cases}$$

$$\begin{cases} 2x + y = -3 \\ 4x - 4y = -36 \end{cases}$$

解き方1 x を消去する解き方

$$\begin{cases} -6x + 2y = 4 & \cdots\cdots\textcircled{1} \\ 9x - y = -20 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 3 \quad -18x + 6y = 12 \\ \textcircled{2} \times 2 \quad +) \quad 18x - 2y = -40 \\ \hline \quad \quad \quad 4y = -28 \\ \quad \quad \quad y = -7 \end{array}$$

$y = -7$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -6x + 2y = 4 \\ -6x + 2 \times (-7) = 4 \\ -6x - 14 = 4 \\ -6x = 18 \\ x = -3 \end{array}$$

答え $x = -3, y = -7$

解き方1 x を消去する解き方

$$\begin{cases} 2x + y = -3 & \cdots\cdots\textcircled{1} \\ 4x - 4y = -36 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 2 \quad 4x + 2y = -6 \\ \textcircled{2} \quad \quad -) \quad 4x - 4y = -36 \\ \hline \quad \quad \quad 6y = 30 \\ \quad \quad \quad y = 5 \end{array}$$

$y = 5$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} 2x + y = -3 \\ 2x + 1 \times 5 = -3 \\ 2x + 5 = -3 \\ 2x = -8 \\ x = -4 \end{array}$$

答え $x = -4, y = 5$

解き方2 y を消去する解き方

$$\begin{cases} -6x + 2y = 4 & \cdots\cdots\textcircled{1} \\ 9x - y = -20 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad \quad -6x + 2y = 4 \\ \textcircled{2} \times 2 \quad +) \quad 18x - 2y = -40 \\ \hline \quad \quad \quad 12x = -36 \\ \quad \quad \quad x = -3 \end{array}$$

$x = -3$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -6x + 2y = 4 \\ -6 \times (-3) + 2y = 4 \\ 18 + 2y = 4 \\ 2y = -14 \\ y = -7 \end{array}$$

答え $x = -3, y = -7$

解き方2 y を消去する解き方

$$\begin{cases} 2x + y = -3 & \cdots\cdots\textcircled{1} \\ 4x - 4y = -36 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 4 \quad 8x + 4y = -12 \\ \textcircled{2} \quad \quad +) \quad 4x - 4y = -36 \\ \hline \quad \quad \quad 12x = -48 \\ \quad \quad \quad x = -4 \end{array}$$

$x = -4$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} 2x + y = -3 \\ 2 \times (-4) + y = -3 \\ -8 + y = -3 \\ y = 5 \end{array}$$

答え $x = -4, y = 5$

$$\begin{cases} -6x + 6y = -12 \\ -4x + 2y = -10 \end{cases}$$

$$\begin{cases} x + 2y = -3 \\ 8x + 9y = 11 \end{cases}$$

解き方1 x を消去する解き方

$$\begin{cases} -6x + 6y = -12 & \cdots\cdots\textcircled{1} \\ -4x + 2y = -10 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 2 \quad -12x + 12y = -24 \\ \textcircled{2} \times 3 \quad -) -12x + 6y = -30 \\ \hline \qquad \qquad \qquad 6y = 6 \\ \qquad \qquad \qquad y = 1 \end{array}$$

$y = 1$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} -4x + 2y = -10 \\ -4x + 2 \times 1 = -10 \\ -4x + 2 = -10 \\ -4x = -12 \\ x = 3 \end{array}$$

答え $x = 3, y = 1$

解き方1 x を消去する解き方

$$\begin{cases} x + 2y = -3 & \cdots\cdots\textcircled{1} \\ 8x + 9y = 11 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 8 \quad 8x + 16y = -24 \\ \textcircled{2} \quad -) 8x + 9y = 11 \\ \hline \qquad \qquad \qquad 7y = -35 \\ \qquad \qquad \qquad y = -5 \end{array}$$

$y = -5$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} x + 2y = -3 \\ x + 2 \times (-5) = -3 \\ x - 10 = -3 \\ x = 7 \end{array}$$

答え $x = 7, y = -5$

解き方2 y を消去する解き方

$$\begin{cases} -6x + 6y = -12 & \cdots\cdots\textcircled{1} \\ -4x + 2y = -10 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad -6x + 6y = -12 \\ \textcircled{2} \times 3 \quad -) -12x + 6y = -30 \\ \hline \qquad \qquad \qquad 6x \quad = 18 \\ \qquad \qquad \qquad x = 3 \end{array}$$

$x = 3$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} -4x + 2y = -10 \\ -4 \times 3 + 2y = -10 \\ -12 + 2y = -10 \\ 2y = 2 \\ y = 1 \end{array}$$

答え $x = 3, y = 1$

解き方2 y を消去する解き方

$$\begin{cases} x + 2y = -3 & \cdots\cdots\textcircled{1} \\ 8x + 9y = 11 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 9 \quad 9x + 18y = -27 \\ \textcircled{2} \times 2 \quad -) 16x + 18y = 22 \\ \hline \qquad \qquad \qquad -7x \quad = -49 \\ \qquad \qquad \qquad x = 7 \end{array}$$

$x = 7$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} x + 2y = -3 \\ 1 \times 7 + 2y = -3 \\ 7 + 2y = -3 \\ 2y = -10 \\ y = -5 \end{array}$$

答え $x = 7, y = -5$

$$\begin{cases} -6x - 2y = -8 \\ 9x + y = 10 \end{cases}$$

$$\begin{cases} -6x - 4y = 0 \\ 3x - 2y = -24 \end{cases}$$

解き方1 x を消去する解き方

$$\begin{cases} -6x - 2y = -8 & \cdots\cdots\textcircled{1} \\ 9x + y = 10 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 3 \quad -18x - 6y = -24 \\ \textcircled{2} \times 2 \quad +) \quad 18x + 2y = 20 \\ \hline \quad \quad \quad -4y = -4 \\ \quad \quad \quad y = 1 \end{array}$$

$y = 1$ を①に代入すると

$$\begin{array}{r} -6x - 2y = -8 \\ -6x - 2 \times 1 = -8 \\ -6x - 2 = -8 \\ -6x = -6 \\ x = 1 \end{array}$$

答え $x = 1, y = 1$

解き方1 x を消去する解き方

$$\begin{cases} -6x - 4y = 0 & \cdots\cdots\textcircled{1} \\ 3x - 2y = -24 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad \quad -6x - 4y = 0 \\ \textcircled{2} \times 2 \quad +) \quad 6x - 4y = -48 \\ \hline \quad \quad \quad -8y = -48 \\ \quad \quad \quad y = 6 \end{array}$$

$y = 6$ を①に代入すると

$$\begin{array}{r} -6x - 4y = 0 \\ -6x - 4 \times 6 = 0 \\ -6x - 24 = 0 \\ -6x = 24 \\ x = -4 \end{array}$$

答え $x = -4, y = 6$

解き方2 y を消去する解き方

$$\begin{cases} -6x - 2y = -8 & \cdots\cdots\textcircled{1} \\ 9x + y = 10 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad \quad -6x - 2y = -8 \\ \textcircled{2} \times 2 \quad +) \quad 18x + 2y = 20 \\ \hline \quad \quad \quad 12x = 12 \\ \quad \quad \quad x = 1 \end{array}$$

$x = 1$ を①に代入すると

$$\begin{array}{r} -6x - 2y = -8 \\ -6 \times 1 - 2y = -8 \\ -6 - 2y = -8 \\ -2y = -2 \\ y = 1 \end{array}$$

答え $x = 1, y = 1$

解き方2 y を消去する解き方

$$\begin{cases} -6x - 4y = 0 & \cdots\cdots\textcircled{1} \\ 3x - 2y = -24 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad \quad -6x - 4y = 0 \\ \textcircled{2} \times 2 \quad -) \quad 6x - 4y = -48 \\ \hline \quad \quad \quad -12x = 48 \\ \quad \quad \quad x = -4 \end{array}$$

$x = -4$ を①に代入すると

$$\begin{array}{r} -6x - 4y = 0 \\ -6 \times (-4) - 4y = 0 \\ 24 - 4y = 0 \\ -4y = -24 \\ y = 6 \end{array}$$

答え $x = -4, y = 6$

$$\begin{cases} -2x + y = 1 \\ -x + 4y = -17 \end{cases}$$

$$\begin{cases} -8x + 8y = -16 \\ 4x - 2y = 0 \end{cases}$$

解き方1 x を消去する解き方

$$\begin{cases} -2x + y = 1 & \cdots\cdots\textcircled{1} \\ -x + 4y = -17 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \qquad -2x + y = 1 \\ \textcircled{2} \times 2 \quad -) -2x + 8y = -34 \\ \hline \qquad \qquad -7y = 35 \\ \qquad \qquad \qquad y = -5 \end{array}$$

$y = -5$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -2x + y = 1 \\ -2x + 1 \times (-5) = 1 \\ -2x - 5 = 1 \\ -2x = 6 \\ x = -3 \end{array}$$

答え $x = -3, y = -5$

解き方2 y を消去する解き方

$$\begin{cases} -2x + y = 1 & \cdots\cdots\textcircled{1} \\ -x + 4y = -17 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 4 \quad -8x + 4y = 4 \\ \textcircled{2} \quad -) -x + 4y = -17 \\ \hline \qquad \qquad -7x = 21 \\ \qquad \qquad \qquad x = -3 \end{array}$$

$x = -3$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -2x + y = 1 \\ -2 \times (-3) + y = 1 \\ 6 + y = 1 \\ y = -5 \end{array}$$

答え $x = -3, y = -5$

解き方1 x を消去する解き方

$$\begin{cases} -8x + 8y = -16 & \cdots\cdots\textcircled{1} \\ 4x - 2y = 0 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \qquad -8x + 8y = -16 \\ \textcircled{2} \times 2 \quad +) 8x - 4y = 0 \\ \hline \qquad \qquad 4y = -16 \\ \qquad \qquad \qquad y = -4 \end{array}$$

$y = -4$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} 4x - 2y = 0 \\ 4x - 2 \times (-4) = 0 \\ 4x + 8 = 0 \\ 4x = -8 \\ x = -2 \end{array}$$

答え $x = -2, y = -4$

解き方2 y を消去する解き方

$$\begin{cases} -8x + 8y = -16 & \cdots\cdots\textcircled{1} \\ 4x - 2y = 0 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \qquad -8x + 8y = -16 \\ \textcircled{2} \times 4 \quad +) 16x - 8y = 0 \\ \hline \qquad \qquad 8x = -16 \\ \qquad \qquad \qquad x = -2 \end{array}$$

$x = -2$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} 4x - 2y = 0 \\ 4 \times (-2) - 2y = 0 \\ -8 - 2y = 0 \\ -2y = 8 \\ y = -4 \end{array}$$

答え $x = -2, y = -4$

$$\begin{cases} -9x + 4y = -15 \\ -6x + 2y = -6 \end{cases}$$

$$\begin{cases} -5x + 6y = -4 \\ 3x - 5y = 1 \end{cases}$$

解き方1 x を消去する解き方

$$\begin{cases} -9x + 4y = -15 & \cdots\cdots\textcircled{1} \\ -6x + 2y = -6 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 2 \quad -18x + 8y = -30 \\ \textcircled{2} \times 3 \quad -) -18x + 6y = -18 \\ \hline \qquad \qquad \qquad 2y = -12 \\ \qquad \qquad \qquad y = -6 \end{array}$$

$y = -6$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} -6x + 2y = -6 \\ -6x + 2 \times (-6) = -6 \\ -6x - 12 = -6 \\ -6x = 6 \\ x = -1 \end{array}$$

答え $x = -1, y = -6$

解き方1 x を消去する解き方

$$\begin{cases} -5x + 6y = -4 & \cdots\cdots\textcircled{1} \\ 3x - 5y = 1 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 3 \quad -15x + 18y = -12 \\ \textcircled{2} \times 5 \quad +) 15x - 25y = 5 \\ \hline \qquad \qquad \qquad -7y = -7 \\ \qquad \qquad \qquad y = 1 \end{array}$$

$y = 1$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} 3x - 5y = 1 \\ 3x - 5 \times 1 = 1 \\ 3x - 5 = 1 \\ 3x = 6 \\ x = 2 \end{array}$$

答え $x = 2, y = 1$

解き方2 y を消去する解き方

$$\begin{cases} -9x + 4y = -15 & \cdots\cdots\textcircled{1} \\ -6x + 2y = -6 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad -9x + 4y = -15 \\ \textcircled{2} \times 2 \quad -) -12x + 4y = -12 \\ \hline \qquad \qquad \qquad 3x = -3 \\ \qquad \qquad \qquad x = -1 \end{array}$$

$x = -1$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} -6x + 2y = -6 \\ -6 \times (-1) + 2y = -6 \\ 6 + 2y = -6 \\ 2y = -12 \\ y = -6 \end{array}$$

答え $x = -1, y = -6$

解き方2 y を消去する解き方

$$\begin{cases} -5x + 6y = -4 & \cdots\cdots\textcircled{1} \\ 3x - 5y = 1 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 5 \quad -25x + 30y = -20 \\ \textcircled{2} \times 6 \quad +) 18x - 30y = 6 \\ \hline \qquad \qquad \qquad -7x = -14 \\ \qquad \qquad \qquad x = 2 \end{array}$$

$x = 2$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} 3x - 5y = 1 \\ 3 \times 2 - 5y = 1 \\ 6 - 5y = 1 \\ -5y = -5 \\ y = 1 \end{array}$$

答え $x = 2, y = 1$

$$\begin{cases} 6x + 3y = 0 \\ 9x - 6y = 21 \end{cases}$$

$$\begin{cases} -2x - y = -15 \\ -x + 3y = 10 \end{cases}$$

解き方1 x を消去する解き方

$$\begin{cases} 6x + 3y = 0 & \cdots\cdots\textcircled{1} \\ 9x - 6y = 21 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 3 \quad 18x + 9y = 0 \\ \textcircled{2} \times 2 \quad -) 18x - 12y = 42 \\ \hline \quad \quad \quad 21y = -42 \\ \quad \quad \quad y = -2 \end{array}$$

$y = -2$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} 6x + 3y = 0 \\ 6x + 3 \times (-2) = 0 \\ 6x - 6 = 0 \\ 6x = 6 \\ x = 1 \end{array}$$

答え $x = 1, y = -2$

解き方1 x を消去する解き方

$$\begin{cases} -2x - y = -15 & \cdots\cdots\textcircled{1} \\ -x + 3y = 10 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad \quad -2x - y = -15 \\ \textcircled{2} \times 2 \quad -) -2x + 6y = 20 \\ \hline \quad \quad \quad -7y = -35 \\ \quad \quad \quad y = 5 \end{array}$$

$y = 5$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -2x - y = -15 \\ -2x - 1 \times 5 = -15 \\ -2x - 5 = -15 \\ -2x = -10 \\ x = 5 \end{array}$$

答え $x = 5, y = 5$

解き方2 y を消去する解き方

$$\begin{cases} 6x + 3y = 0 & \cdots\cdots\textcircled{1} \\ 9x - 6y = 21 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 2 \quad 12x + 6y = 0 \\ \textcircled{2} \quad \quad +) 9x - 6y = 21 \\ \hline \quad \quad \quad 21x = 21 \\ \quad \quad \quad x = 1 \end{array}$$

$x = 1$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} 6x + 3y = 0 \\ 6 \times 1 + 3y = 0 \\ 6 + 3y = 0 \\ 3y = -6 \\ y = -2 \end{array}$$

答え $x = 1, y = -2$

解き方2 y を消去する解き方

$$\begin{cases} -2x - y = -15 & \cdots\cdots\textcircled{1} \\ -x + 3y = 10 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 3 \quad -6x - 3y = -45 \\ \textcircled{2} \quad \quad +) -x + 3y = 10 \\ \hline \quad \quad \quad -7x = -35 \\ \quad \quad \quad x = 5 \end{array}$$

$x = 5$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} -x + 3y = 10 \\ -1 \times 5 + 3y = 10 \\ -5 + 3y = 10 \\ 3y = 15 \\ y = 5 \end{array}$$

答え $x = 5, y = 5$

$$\begin{cases} -2x - 2y = 6 \\ x + 3y = -19 \end{cases}$$

$$\begin{cases} -4x + 5y = 0 \\ 5x - 6y = -1 \end{cases}$$

解き方1 x を消去する解き方

$$\begin{cases} -2x - 2y = 6 & \cdots\cdots\textcircled{1} \\ x + 3y = -19 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \qquad -2x - 2y = 6 \\ \textcircled{2} \times 2 \quad +) \quad 2x + 6y = -38 \\ \hline \qquad \qquad \qquad 4y = -32 \\ \qquad \qquad \qquad y = -8 \end{array}$$

$y = -8$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -2x - 2y = 6 \\ -2x - 2 \times (-8) = 6 \\ -2x + 16 = 6 \\ -2x = -10 \\ x = 5 \end{array}$$

答え $x = 5, y = -8$

解き方1 x を消去する解き方

$$\begin{cases} -4x + 5y = 0 & \cdots\cdots\textcircled{1} \\ 5x - 6y = -1 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 5 \qquad -20x + 25y = 0 \\ \textcircled{2} \times 4 \quad +) \quad 20x - 24y = -4 \\ \hline \qquad \qquad \qquad y = -4 \\ \qquad \qquad \qquad y = -4 \end{array}$$

$y = -4$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -4x + 5y = 0 \\ -4x + 5 \times (-4) = 0 \\ -4x - 20 = 0 \\ -4x = 20 \\ x = -5 \end{array}$$

答え $x = -5, y = -4$

解き方2 y を消去する解き方

$$\begin{cases} -2x - 2y = 6 & \cdots\cdots\textcircled{1} \\ x + 3y = -19 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 3 \qquad -6x - 6y = 18 \\ \textcircled{2} \times 2 \quad +) \quad 2x + 6y = -38 \\ \hline \qquad \qquad -4x \qquad = -20 \\ \qquad \qquad \qquad x = 5 \end{array}$$

$x = 5$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -2x - 2y = 6 \\ -2 \times 5 - 2y = 6 \\ -10 - 2y = 6 \\ -2y = 16 \\ y = -8 \end{array}$$

答え $x = 5, y = -8$

解き方2 y を消去する解き方

$$\begin{cases} -4x + 5y = 0 & \cdots\cdots\textcircled{1} \\ 5x - 6y = -1 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 6 \qquad -24x + 30y = 0 \\ \textcircled{2} \times 5 \quad +) \quad 25x - 30y = -5 \\ \hline \qquad \qquad \qquad x \qquad = -5 \\ \qquad \qquad \qquad x = -5 \end{array}$$

$x = -5$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -4x + 5y = 0 \\ -4 \times (-5) + 5y = 0 \\ 20 + 5y = 0 \\ 5y = -20 \\ y = -4 \end{array}$$

答え $x = -5, y = -4$

$$\begin{cases} -2x - 4y = -12 \\ 4x + 2y = 12 \end{cases}$$

$$\begin{cases} x + 2y = -4 \\ 2x + 5y = -11 \end{cases}$$

解き方1 x を消去する解き方

$$\begin{cases} -2x - 4y = -12 & \cdots\cdots\text{①} \\ 4x + 2y = 12 & \cdots\cdots\text{②} \end{cases}$$

$$\begin{array}{r} \text{①} \times 2 \quad -4x - 8y = -24 \\ \text{②} \quad \quad +) \quad 4x + 2y = 12 \\ \hline \quad \quad \quad -6y = -12 \\ \quad \quad \quad \quad y = 2 \end{array}$$

$y = 2$ を②に代入すると

$$\begin{aligned} 4x + 2y &= 12 \\ 4x + 2 \times 2 &= 12 \\ 4x + 4 &= 12 \\ 4x &= 8 \\ x &= 2 \end{aligned}$$

答え $x = 2, y = 2$

解き方2 y を消去する解き方

$$\begin{cases} -2x - 4y = -12 & \cdots\cdots\text{①} \\ 4x + 2y = 12 & \cdots\cdots\text{②} \end{cases}$$

$$\begin{array}{r} \text{①} \quad \quad -2x - 4y = -12 \\ \text{②} \times 2 \quad +) \quad 8x + 4y = 24 \\ \hline \quad \quad \quad 6x \quad = 12 \\ \quad \quad \quad \quad x = 2 \end{array}$$

$x = 2$ を①に代入すると

$$\begin{aligned} -2x - 4y &= -12 \\ -2 \times 2 - 4y &= -12 \\ -4 - 4y &= -12 \\ -4y &= -8 \\ y &= 2 \end{aligned}$$

答え $x = 2, y = 2$

解き方1 x を消去する解き方

$$\begin{cases} x + 2y = -4 & \cdots\cdots\text{①} \\ 2x + 5y = -11 & \cdots\cdots\text{②} \end{cases}$$

$$\begin{array}{r} \text{①} \times 2 \quad 2x + 4y = -8 \\ \text{②} \quad \quad -) \quad 2x + 5y = -11 \\ \hline \quad \quad \quad -y = 3 \\ \quad \quad \quad \quad y = -3 \end{array}$$

$y = -3$ を①に代入すると

$$\begin{aligned} x + 2y &= -4 \\ x + 2 \times (-3) &= -4 \\ x - 6 &= -4 \\ x &= 2 \end{aligned}$$

答え $x = 2, y = -3$

解き方2 y を消去する解き方

$$\begin{cases} x + 2y = -4 & \cdots\cdots\text{①} \\ 2x + 5y = -11 & \cdots\cdots\text{②} \end{cases}$$

$$\begin{array}{r} \text{①} \times 5 \quad 5x + 10y = -20 \\ \text{②} \times 2 \quad -) \quad 4x + 10y = -22 \\ \hline \quad \quad \quad x \quad = 2 \\ \quad \quad \quad \quad x = 2 \end{array}$$

$x = 2$ を①に代入すると

$$\begin{aligned} x + 2y &= -4 \\ 1 \times 2 + 2y &= -4 \\ 2 + 2y &= -4 \\ 2y &= -6 \\ y &= -3 \end{aligned}$$

答え $x = 2, y = -3$

問題

次の連立方程式を加減法で解いてみましょう。

$$\begin{cases} 2x - y = -8 \\ 4x + 6y = 16 \end{cases}$$

$$\begin{cases} -2x + 4y = -16 \\ 2x - 2y = 4 \end{cases}$$

解き方1 x を消去する解き方

$$\begin{cases} 2x - y = -8 & \cdots\cdots\text{①} \\ 4x + 6y = 16 & \cdots\cdots\text{②} \end{cases}$$

$$\begin{array}{r} \text{①} \times 2 \quad 4x - 2y = -16 \\ \text{②} \quad \quad -) 4x + 6y = 16 \\ \hline \quad \quad \quad -8y = -32 \\ \quad \quad \quad \quad y = 4 \end{array}$$

$y = 4$ を①に代入すると

$$\begin{array}{r} 2x - y = -8 \\ 2x - 1 \times 4 = -8 \\ 2x - 4 = -8 \\ 2x = -4 \\ x = -2 \end{array}$$

答え $x = -2, y = 4$

解き方 x を消去する解き方

$$\begin{cases} -2x + 4y = -16 & \cdots\cdots\text{①} \\ 2x - 2y = 4 & \cdots\cdots\text{②} \end{cases}$$

$$\begin{array}{r} \text{①} \quad \quad -2x + 4y = -16 \\ \text{②} \quad +) 2x - 2y = 4 \\ \hline \quad \quad \quad 2y = -12 \\ \quad \quad \quad \quad y = -6 \end{array}$$

$y = -6$ を②に代入すると

$$\begin{array}{r} 2x - 2y = 4 \\ 2x - 2 \times (-6) = 4 \\ 2x + 12 = 4 \\ 2x = -8 \\ x = -4 \end{array}$$

答え $x = -4, y = -6$

解き方2 y を消去する解き方

$$\begin{cases} 2x - y = -8 & \cdots\cdots\text{①} \\ 4x + 6y = 16 & \cdots\cdots\text{②} \end{cases}$$

$$\begin{array}{r} \text{①} \times 6 \quad 12x - 6y = -48 \\ \text{②} \quad \quad +) 4x + 6y = 16 \\ \hline \quad \quad \quad 16x = -32 \\ \quad \quad \quad \quad x = -2 \end{array}$$

$x = -2$ を①に代入すると

$$\begin{array}{r} 2x - y = -8 \\ 2 \times (-2) - y = -8 \\ -4 - y = -8 \\ -y = -4 \\ y = 4 \end{array}$$

答え $x = -2, y = 4$

参考 y を消去する解き方

$$\begin{cases} -2x + 4y = -16 & \cdots\cdots\text{①} \\ 2x - 2y = 4 & \cdots\cdots\text{②} \end{cases}$$

$$\begin{array}{r} \text{①} \quad \quad -2x + 4y = -16 \\ \text{②} \times 2 \quad +) 4x - 4y = 8 \\ \hline \quad \quad \quad 2x = -8 \\ \quad \quad \quad \quad x = -4 \end{array}$$

$x = -4$ を②に代入すると

$$\begin{array}{r} 2x - 2y = 4 \\ 2 \times (-4) - 2y = 4 \\ -8 - 2y = 4 \\ -2y = 12 \\ y = -6 \end{array}$$

答え $x = -4, y = -6$

$$\begin{cases} -2x + y = 14 \\ 2x - 3y = -22 \end{cases}$$

$$\begin{cases} x - 8y = -18 \\ x + 2y = 12 \end{cases}$$

解き方 x を消去する解き方

$$\begin{cases} -2x + y = 14 & \cdots\cdots\textcircled{1} \\ 2x - 3y = -22 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad -2x + y = 14 \\ \textcircled{2} \quad +) \quad 2x - 3y = -22 \\ \hline \quad \quad -2y = -8 \\ \quad \quad \quad y = 4 \end{array}$$

$y = 4$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -2x + y = 14 \\ -2x + 1 \times 4 = 14 \\ -2x + 4 = 14 \\ -2x = 10 \\ x = -5 \end{array}$$

答え $x = -5, y = 4$

解き方 x を消去する解き方

$$\begin{cases} x - 8y = -18 & \cdots\cdots\textcircled{1} \\ x + 2y = 12 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad x - 8y = -18 \\ \textcircled{2} \quad -) x + 2y = 12 \\ \hline \quad \quad -10y = -30 \\ \quad \quad \quad y = 3 \end{array}$$

$y = 3$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} x + 2y = 12 \\ x + 2 \times 3 = 12 \\ x + 6 = 12 \\ x = 6 \end{array}$$

答え $x = 6, y = 3$

参考 y を消去する解き方

$$\begin{cases} -2x + y = 14 & \cdots\cdots\textcircled{1} \\ 2x - 3y = -22 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 3 \quad -6x + 3y = 42 \\ \textcircled{2} \quad +) \quad 2x - 3y = -22 \\ \hline \quad \quad -4x = 20 \\ \quad \quad \quad x = -5 \end{array}$$

$x = -5$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -2x + y = 14 \\ -2 \times (-5) + y = 14 \\ 10 + y = 14 \\ y = 4 \end{array}$$

答え $x = -5, y = 4$

参考 y を消去する解き方

$$\begin{cases} x - 8y = -18 & \cdots\cdots\textcircled{1} \\ x + 2y = 12 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad x - 8y = -18 \\ \textcircled{2} \times 4 \quad +) 4x + 8y = 48 \\ \hline \quad \quad 5x = 30 \\ \quad \quad \quad x = 6 \end{array}$$

$x = 6$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} x + 2y = 12 \\ 1 \times 6 + 2y = 12 \\ 6 + 2y = 12 \\ 2y = 6 \\ y = 3 \end{array}$$

答え $x = 6, y = 3$

$$\begin{cases} x - 2y = 5 \\ 5x - 8y = 15 \end{cases}$$

$$\begin{cases} 2x - 8y = -8 \\ 2x + 4y = 16 \end{cases}$$

解き方1 x を消去する解き方

$$\begin{cases} x - 2y = 5 & \cdots\cdots\text{①} \\ 5x - 8y = 15 & \cdots\cdots\text{②} \end{cases}$$

$$\begin{array}{r} \text{①} \times 5 \quad 5x - 10y = 25 \\ \text{②} \quad \quad -) 5x - 8y = 15 \\ \hline \quad \quad \quad -2y = 10 \\ \quad \quad \quad \quad y = -5 \end{array}$$

$y = -5$ を①に代入すると

$$\begin{array}{r} x - 2y = 5 \\ x - 2 \times (-5) = 5 \\ x + 10 = 5 \\ x = -5 \end{array}$$

答え $x = -5, y = -5$

解き方2 y を消去する解き方

$$\begin{cases} x - 2y = 5 & \cdots\cdots\text{①} \\ 5x - 8y = 15 & \cdots\cdots\text{②} \end{cases}$$

$$\begin{array}{r} \text{①} \times 4 \quad 4x - 8y = 20 \\ \text{②} \quad \quad -) 5x - 8y = 15 \\ \hline \quad \quad \quad -x \quad = 5 \\ \quad \quad \quad \quad x = -5 \end{array}$$

$x = -5$ を①に代入すると

$$\begin{array}{r} x - 2y = 5 \\ 1 \times (-5) - 2y = 5 \\ -5 - 2y = 5 \\ -2y = 10 \\ y = -5 \end{array}$$

答え $x = -5, y = -5$

解き方 x を消去する解き方

$$\begin{cases} 2x - 8y = -8 & \cdots\cdots\text{①} \\ 2x + 4y = 16 & \cdots\cdots\text{②} \end{cases}$$

$$\begin{array}{r} \text{①} \quad 2x - 8y = -8 \\ \text{②} \quad -) 2x + 4y = 16 \\ \hline \quad \quad \quad -12y = -24 \\ \quad \quad \quad \quad y = 2 \end{array}$$

$y = 2$ を①に代入すると

$$\begin{array}{r} 2x - 8y = -8 \\ 2x - 8 \times 2 = -8 \\ 2x - 16 = -8 \\ 2x = 8 \\ x = 4 \end{array}$$

答え $x = 4, y = 2$

参考 y を消去する解き方

$$\begin{cases} 2x - 8y = -8 & \cdots\cdots\text{①} \\ 2x + 4y = 16 & \cdots\cdots\text{②} \end{cases}$$

$$\begin{array}{r} \text{①} \quad 2x - 8y = -8 \\ \text{②} \times 2 \quad +) 4x + 8y = 32 \\ \hline \quad \quad \quad 6x \quad = 24 \\ \quad \quad \quad \quad x = 4 \end{array}$$

$x = 4$ を①に代入すると

$$\begin{array}{r} 2x - 8y = -8 \\ 2 \times 4 - 8y = -8 \\ 8 - 8y = -8 \\ -8y = -16 \\ y = 2 \end{array}$$

答え $x = 4, y = 2$

$$\begin{cases} -3x + 7y = 1 \\ -x - 4y = -6 \end{cases}$$

$$\begin{cases} -2x + 9y = 9 \\ -x + 4y = 5 \end{cases}$$

解き方1 x を消去する解き方

$$\begin{cases} -3x + 7y = 1 & \cdots\cdots\textcircled{1} \\ -x - 4y = -6 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \qquad -3x + 7y = 1 \\ \textcircled{2} \times 3 \quad -) -3x - 12y = -18 \\ \hline \qquad \qquad 19y = 19 \\ \qquad \qquad \qquad y = 1 \end{array}$$

$y = 1$ を①に代入すると

$$\begin{array}{r} -3x + 7y = 1 \\ -3x + 7 \times 1 = 1 \\ -3x + 7 = 1 \\ -3x = -6 \\ x = 2 \end{array}$$

答え $x = 2, y = 1$

解き方1 x を消去する解き方

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

$$\begin{array}{r} \textcircled{1} \qquad -2x + 9y = 9 \\ \textcircled{2} \times 2 \quad -) -2x + 8y = 10 \\ \hline \qquad \qquad y = -1 \\ \qquad \qquad \qquad y = -1 \end{array}$$

$y = -1$ を②に代入すると

$$\begin{array}{r} -x + 4y = 5 \\ -x + 4 \times (-1) = 5 \\ -x - 4 = 5 \\ -x = 9 \\ x = -9 \end{array}$$

答え $x = -9, y = -1$

解き方2 y を消去する解き方

$$\begin{cases} -3x + 7y = 1 & \cdots\cdots\textcircled{1} \\ -x - 4y = -6 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 4 \qquad -12x + 28y = 4 \\ \textcircled{2} \times 7 \quad +) -7x - 28y = -42 \\ \hline \qquad \qquad -19x \qquad = -38 \\ \qquad \qquad \qquad x = 2 \end{array}$$

$x = 2$ を②に代入すると

$$\begin{array}{r} -x - 4y = -6 \\ -1 \times 2 - 4y = -6 \\ -2 - 4y = -6 \\ -4y = -4 \\ y = 1 \end{array}$$

答え $x = 2, y = 1$

解き方2 y を消去する解き方

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

$$\begin{array}{r} \textcircled{1} \times 4 \qquad -8x + 36y = 36 \\ \textcircled{2} \times 9 \quad -) -9x + 36y = 45 \\ \hline \qquad \qquad x \qquad = -9 \\ \qquad \qquad \qquad x = -9 \end{array}$$

$x = -9$ を②に代入すると

$$\begin{array}{r} -x + 4y = 5 \\ -1 \times (-9) + 4y = 5 \\ 9 + 4y = 5 \\ 4y = -4 \\ y = -1 \end{array}$$

答え $x = -9, y = -1$

$$\begin{cases} -4x - 3y = 32 \\ -4x + 3y = 8 \end{cases}$$

$$\begin{cases} 2x - 5y = 12 \\ 8x + 3y = 2 \end{cases}$$

解き方1 x を消去する解き方

$$\begin{cases} -4x - 3y = 32 & \cdots\cdots\textcircled{1} \\ -4x + 3y = 8 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\textcircled{1} \quad -4x - 3y = 32$$

$$\textcircled{2} \quad \begin{array}{r} -) -4x + 3y = 8 \\ \hline -6y = 24 \end{array}$$

$$y = -4$$

$y = -4$ を $\textcircled{2}$ に代入すると

$$-4x + 3y = 8$$

$$-4x + 3 \times (-4) = 8$$

$$-4x - 12 = 8$$

$$-4x = 20$$

$$x = -5$$

答え $x = -5, y = -4$

解き方2 y を消去する解き方

$$\begin{cases} -4x - 3y = 32 & \cdots\cdots\textcircled{1} \\ -4x + 3y = 8 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\textcircled{1} \quad -4x - 3y = 32$$

$$\textcircled{2} \quad \begin{array}{r} +) -4x + 3y = 8 \\ \hline -8x = 40 \end{array}$$

$$x = -5$$

$x = -5$ を $\textcircled{2}$ に代入すると

$$-4x + 3y = 8$$

$$-4 \times (-5) + 3y = 8$$

$$20 + 3y = 8$$

$$3y = -12$$

$$y = -4$$

答え $x = -5, y = -4$

解き方1 x を消去する解き方

$$\begin{cases} 2x - 5y = 12 & \cdots\cdots\textcircled{1} \\ 8x + 3y = 2 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\textcircled{1} \times 4 \quad 8x - 20y = 48$$

$$\textcircled{2} \quad \begin{array}{r} -) 8x + 3y = 2 \\ \hline -23y = 46 \end{array}$$

$$y = -2$$

$y = -2$ を $\textcircled{2}$ に代入すると

$$8x + 3y = 2$$

$$8x + 3 \times (-2) = 2$$

$$8x - 6 = 2$$

$$8x = 8$$

$$x = 1$$

答え $x = 1, y = -2$

解き方2 y を消去する解き方

$$\begin{cases} 2x - 5y = 12 & \cdots\cdots\textcircled{1} \\ 8x + 3y = 2 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\textcircled{1} \times 3 \quad 6x - 15y = 36$$

$$\textcircled{2} \times 5 \quad \begin{array}{r} +) 40x + 15y = 10 \\ \hline 46x = 46 \end{array}$$

$$x = 1$$

$x = 1$ を $\textcircled{2}$ に代入すると

$$8x + 3y = 2$$

$$8 \times 1 + 3y = 2$$

$$8 + 3y = 2$$

$$3y = -6$$

$$y = -2$$

答え $x = 1, y = -2$

$$\begin{cases} -3x + 2y = -2 \\ 2x + y = -15 \end{cases}$$

$$\begin{cases} -4x - 6y = 10 \\ -4x - 2y = -10 \end{cases}$$

解き方1 x を消去する解き方

$$\begin{cases} -3x + 2y = -2 & \cdots\cdots\textcircled{1} \\ 2x + y = -15 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 2 \quad -6x + 4y = -4 \\ \textcircled{2} \times 3 \quad +) \quad 6x + 3y = -45 \\ \hline \quad \quad \quad 7y = -49 \\ \quad \quad \quad y = -7 \end{array}$$

$y = -7$ を $\textcircled{1}$ に代入すると

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

答え $x = -4, y = -7$

解き方 x を消去する解き方

$$\begin{cases} -4x - 6y = 10 & \cdots\cdots\textcircled{1} \\ -4x - 2y = -10 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad -4x - 6y = 10 \\ \textcircled{2} \quad -) -4x - 2y = -10 \\ \hline \quad \quad -4y = 20 \\ \quad \quad y = -5 \end{array}$$

$y = -5$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} -4x - 2y = -10 \\ -4x - 2 \times (-5) = -10 \\ -4x + 10 = -10 \\ -4x = -20 \\ x = 5 \end{array}$$

答え $x = 5, y = -5$

解き方2 y を消去する解き方

$$\begin{cases} -3x + 2y = -2 & \cdots\cdots\textcircled{1} \\ 2x + y = -15 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad -3x + 2y = -2 \\ \textcircled{2} \times 2 \quad -) \quad 4x + 2y = -30 \\ \hline \quad -7x \quad = 28 \\ \quad \quad \quad x = -4 \end{array}$$

$x = -4$ を $\textcircled{1}$ に代入すると

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

答え $x = -4, y = -7$

参考 y を消去する解き方

$$\begin{cases} -4x - 6y = 10 & \cdots\cdots\textcircled{1} \\ -4x - 2y = -10 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad -4x - 6y = 10 \\ \textcircled{2} \times 3 \quad -) -12x - 6y = -30 \\ \hline \quad \quad 8x \quad = 40 \\ \quad \quad \quad x = 5 \end{array}$$

$x = 5$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} -4x - 2y = -10 \\ -4 \times 5 - 2y = -10 \\ -20 - 2y = -10 \\ -2y = 10 \\ y = -5 \end{array}$$

答え $x = 5, y = -5$

$$\begin{cases} x - 4y = -26 \\ x + 2y = 16 \end{cases}$$

$$\begin{cases} 2x - 6y = -12 \\ 4x - 9y = -15 \end{cases}$$

解き方 x を消去する解き方

$$\begin{cases} x - 4y = -26 & \dots\dots ① \\ x + 2y = 16 & \dots\dots ② \end{cases}$$

$$\begin{array}{r} ① \quad x - 4y = -26 \\ ② \quad -) x + 2y = 16 \\ \hline \quad \quad -6y = -42 \\ \quad \quad \quad y = 7 \end{array}$$

$y = 7$ を②に代入すると

$$\begin{array}{r} x + 2y = 16 \\ x + 2 \times 7 = 16 \\ x + 14 = 16 \\ x = 2 \end{array}$$

答え $x = 2, y = 7$

参考 y を消去する解き方

$$\begin{cases} x - 4y = -26 & \dots\dots ① \\ x + 2y = 16 & \dots\dots ② \end{cases}$$

$$\begin{array}{r} ① \quad x - 4y = -26 \\ ② \times 2 \quad +) 2x + 4y = 32 \\ \hline \quad \quad 3x = 6 \\ \quad \quad \quad x = 2 \end{array}$$

$x = 2$ を②に代入すると

$$\begin{array}{r} x + 2y = 16 \\ 1 \times 2 + 2y = 16 \\ 2 + 2y = 16 \\ 2y = 14 \\ y = 7 \end{array}$$

答え $x = 2, y = 7$

解き方 1 x を消去する解き方

$$\begin{cases} 2x - 6y = -12 & \dots\dots ① \\ 4x - 9y = -15 & \dots\dots ② \end{cases}$$

$$\begin{array}{r} ① \times 2 \quad 4x - 12y = -24 \\ ② \quad -) 4x - 9y = -15 \\ \hline \quad \quad -3y = -9 \\ \quad \quad \quad y = 3 \end{array}$$

$y = 3$ を①に代入すると

$$\begin{array}{r} 2x - 6y = -12 \\ 2x - 6 \times 3 = -12 \\ 2x - 18 = -12 \\ 2x = 6 \\ x = 3 \end{array}$$

答え $x = 3, y = 3$

解き方 2 y を消去する解き方

$$\begin{cases} 2x - 6y = -12 & \dots\dots ① \\ 4x - 9y = -15 & \dots\dots ② \end{cases}$$

$$\begin{array}{r} ① \times 3 \quad 6x - 18y = -36 \\ ② \times 2 \quad -) 8x - 18y = -30 \\ \hline \quad \quad -2x = -6 \\ \quad \quad \quad x = 3 \end{array}$$

$x = 3$ を①に代入すると

$$\begin{array}{r} 2x - 6y = -12 \\ 2 \times 3 - 6y = -12 \\ 6 - 6y = -12 \\ -6y = -18 \\ y = 3 \end{array}$$

答え $x = 3, y = 3$

$$\begin{cases} -x - 3y = 1 \\ 8x + 6y = -26 \end{cases}$$

$$\begin{cases} -2x - 4y = -14 \\ 6x - 8y = 2 \end{cases}$$

解き方1 x を消去する解き方

$$\begin{cases} -x - 3y = 1 & \cdots\cdots\textcircled{1} \\ 8x + 6y = -26 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 8 \quad -8x - 24y = 8 \\ \textcircled{2} \quad \quad \quad +) \quad 8x + 6y = -26 \\ \hline \quad \quad \quad \quad -18y = -18 \\ \quad \quad \quad \quad \quad \quad y = 1 \end{array}$$

$y = 1$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -x - 3y = 1 \\ -x - 3 \times 1 = 1 \\ -x - 3 = 1 \\ -x = 4 \\ x = -4 \end{array}$$

答え $x = -4, y = 1$

解き方2 y を消去する解き方

$$\begin{cases} -x - 3y = 1 & \cdots\cdots\textcircled{1} \\ 8x + 6y = -26 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 2 \quad -2x - 6y = 2 \\ \textcircled{2} \quad \quad \quad +) \quad 8x + 6y = -26 \\ \hline \quad \quad \quad \quad 6x \quad = -24 \\ \quad \quad \quad \quad \quad \quad x = -4 \end{array}$$

$x = -4$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -x - 3y = 1 \\ -1 \times (-4) - 3y = 1 \\ 4 - 3y = 1 \\ -3y = -3 \\ y = 1 \end{array}$$

答え $x = -4, y = 1$

解き方1 x を消去する解き方

$$\begin{cases} -2x - 4y = -14 & \cdots\cdots\textcircled{1} \\ 6x - 8y = 2 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 3 \quad -6x - 12y = -42 \\ \textcircled{2} \quad \quad \quad +) \quad 6x - 8y = 2 \\ \hline \quad \quad \quad \quad -20y = -40 \\ \quad \quad \quad \quad \quad \quad y = 2 \end{array}$$

$y = 2$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -2x - 4y = -14 \\ -2x - 4 \times 2 = -14 \\ -2x - 8 = -14 \\ -2x = -6 \\ x = 3 \end{array}$$

答え $x = 3, y = 2$

解き方2 y を消去する解き方

$$\begin{cases} -2x - 4y = -14 & \cdots\cdots\textcircled{1} \\ 6x - 8y = 2 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 2 \quad -4x - 8y = -28 \\ \textcircled{2} \quad \quad \quad -) \quad 6x - 8y = 2 \\ \hline \quad \quad \quad \quad -10x \quad = -30 \\ \quad \quad \quad \quad \quad \quad x = 3 \end{array}$$

$x = 3$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -2x - 4y = -14 \\ -2 \times 3 - 4y = -14 \\ -6 - 4y = -14 \\ -4y = -8 \\ y = 2 \end{array}$$

答え $x = 3, y = 2$

$$\begin{cases} -2x + y = 23 \\ 2x + y = -9 \end{cases}$$

$$\begin{cases} 2x + y = 16 \\ 4x + 3y = 34 \end{cases}$$

解き方1 x を消去する解き方

$$\begin{cases} -2x + y = 23 & \cdots\cdots\textcircled{1} \\ 2x + y = -9 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad -2x + y = 23 \\ \textcircled{2} \quad +) \quad 2x + y = -9 \\ \hline \quad \quad \quad 2y = 14 \\ \quad \quad \quad y = 7 \end{array}$$

$y = 7$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} 2x + y = -9 \\ 2x + 1 \times 7 = -9 \\ 2x + 7 = -9 \\ 2x = -16 \\ x = -8 \end{array}$$

答え $x = -8, y = 7$

解き方2 y を消去する解き方

$$\begin{cases} -2x + y = 23 & \cdots\cdots\textcircled{1} \\ 2x + y = -9 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad -2x + y = 23 \\ \textcircled{2} \quad -) \quad 2x + y = -9 \\ \hline \quad \quad \quad -4x = 32 \\ \quad \quad \quad x = -8 \end{array}$$

$x = -8$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} 2x + y = -9 \\ 2 \times (-8) + y = -9 \\ -16 + y = -9 \\ y = 7 \end{array}$$

答え $x = -8, y = 7$

解き方1 x を消去する解き方

$$\begin{cases} 2x + y = 16 & \cdots\cdots\textcircled{1} \\ 4x + 3y = 34 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 2 \quad 4x + 2y = 32 \\ \textcircled{2} \quad -) \quad 4x + 3y = 34 \\ \hline \quad \quad \quad -y = -2 \\ \quad \quad \quad y = 2 \end{array}$$

$y = 2$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} 2x + y = 16 \\ 2x + 1 \times 2 = 16 \\ 2x + 2 = 16 \\ 2x = 14 \\ x = 7 \end{array}$$

答え $x = 7, y = 2$

解き方2 y を消去する解き方

$$\begin{cases} 2x + y = 16 & \cdots\cdots\textcircled{1} \\ 4x + 3y = 34 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 3 \quad 6x + 3y = 48 \\ \textcircled{2} \quad -) \quad 4x + 3y = 34 \\ \hline \quad \quad \quad 2x = 14 \\ \quad \quad \quad x = 7 \end{array}$$

$x = 7$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} 2x + y = 16 \\ 2 \times 7 + y = 16 \\ 14 + y = 16 \\ y = 2 \end{array}$$

答え $x = 7, y = 2$

$$\begin{cases} -4x - 3y = -12 \\ 2x + 3y = -6 \end{cases}$$

$$\begin{cases} -9x - 3y = 3 \\ 6x + 5y = -14 \end{cases}$$

解き方 y を消去する解き方

$$\begin{cases} -4x - 3y = -12 & \dots\dots ① \\ 2x + 3y = -6 & \dots\dots ② \end{cases}$$

$$\begin{array}{r} ① \quad -4x - 3y = -12 \\ ② \quad +) \quad 2x + 3y = -6 \\ \hline \quad -2x \quad = -18 \\ \quad \quad \quad x = 9 \end{array}$$

$x = 9$ を②に代入すると

$$\begin{array}{r} 2x + 3y = -6 \\ 2 \times 9 + 3y = -6 \\ 18 + 3y = -6 \\ 3y = -24 \\ y = -8 \end{array}$$

答え $x = 9, y = -8$

解き方 1 x を消去する解き方

$$\begin{cases} -9x - 3y = 3 & \dots\dots ① \\ 6x + 5y = -14 & \dots\dots ② \end{cases}$$

$$\begin{array}{r} ① \times 2 \quad -18x - 6y = 6 \\ ② \times 3 \quad +) \quad 18x + 15y = -42 \\ \hline \quad \quad \quad 9y = -36 \\ \quad \quad \quad y = -4 \end{array}$$

$y = -4$ を①に代入すると

$$\begin{array}{r} -9x - 3y = 3 \\ -9x - 3 \times (-4) = 3 \\ -9x + 12 = 3 \\ -9x = -9 \\ x = 1 \end{array}$$

答え $x = 1, y = -4$

参考 x を消去する解き方

$$\begin{cases} -4x - 3y = -12 & \dots\dots ① \\ 2x + 3y = -6 & \dots\dots ② \end{cases}$$

$$\begin{array}{r} ① \quad -4x - 3y = -12 \\ ② \times 2 \quad +) \quad 4x + 6y = -12 \\ \hline \quad \quad \quad 3y = -24 \\ \quad \quad \quad y = -8 \end{array}$$

$y = -8$ を②に代入すると

$$\begin{array}{r} 2x + 3y = -6 \\ 2x + 3 \times (-8) = -6 \\ 2x - 24 = -6 \\ 2x = 18 \\ x = 9 \end{array}$$

答え $x = 9, y = -8$

解き方 2 y を消去する解き方

$$\begin{cases} -9x - 3y = 3 & \dots\dots ① \\ 6x + 5y = -14 & \dots\dots ② \end{cases}$$

$$\begin{array}{r} ① \times 5 \quad -45x - 15y = 15 \\ ② \times 3 \quad +) \quad 18x + 15y = -42 \\ \hline \quad -27x \quad = -27 \\ \quad \quad \quad x = 1 \end{array}$$

$x = 1$ を①に代入すると

$$\begin{array}{r} -9x - 3y = 3 \\ -9 \times 1 - 3y = 3 \\ -9 - 3y = 3 \\ -3y = 12 \\ y = -4 \end{array}$$

答え $x = 1, y = -4$

$$\begin{cases} -6x + 8y = 12 \\ 2x - 4y = -8 \end{cases}$$

$$\begin{cases} -5x - 6y = 24 \\ x + 4y = -2 \end{cases}$$

解き方1 x を消去する解き方

$$\begin{cases} -6x + 8y = 12 & \cdots\cdots\textcircled{1} \\ 2x - 4y = -8 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \qquad -6x + 8y = 12 \\ \textcircled{2} \times 3 \quad +) \quad 6x - 12y = -24 \\ \hline \qquad \qquad -4y = -12 \\ \qquad \qquad \qquad y = 3 \end{array}$$

$y = 3$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} 2x - 4y = -8 \\ 2x - 4 \times 3 = -8 \\ 2x - 12 = -8 \\ 2x = 4 \\ x = 2 \end{array}$$

答え $x = 2, y = 3$

解き方1 x を消去する解き方

$$\begin{cases} -5x - 6y = 24 & \cdots\cdots\textcircled{1} \\ x + 4y = -2 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \qquad -5x - 6y = 24 \\ \textcircled{2} \times 5 \quad +) \quad 5x + 20y = -10 \\ \hline \qquad \qquad 14y = 14 \\ \qquad \qquad \qquad y = 1 \end{array}$$

$y = 1$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} x + 4y = -2 \\ x + 4 \times 1 = -2 \\ x + 4 = -2 \\ x = -6 \end{array}$$

答え $x = -6, y = 1$

解き方2 y を消去する解き方

$$\begin{cases} -6x + 8y = 12 & \cdots\cdots\textcircled{1} \\ 2x - 4y = -8 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \qquad -6x + 8y = 12 \\ \textcircled{2} \times 2 \quad +) \quad 4x - 8y = -16 \\ \hline \qquad \qquad -2x \qquad = -4 \\ \qquad \qquad \qquad x = 2 \end{array}$$

$x = 2$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} 2x - 4y = -8 \\ 2 \times 2 - 4y = -8 \\ 4 - 4y = -8 \\ -4y = -12 \\ y = 3 \end{array}$$

答え $x = 2, y = 3$

解き方2 y を消去する解き方

$$\begin{cases} -5x - 6y = 24 & \cdots\cdots\textcircled{1} \\ x + 4y = -2 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 2 \qquad -10x - 12y = 48 \\ \textcircled{2} \times 3 \quad +) \quad 3x + 12y = -6 \\ \hline \qquad \qquad -7x \qquad = 42 \\ \qquad \qquad \qquad x = -6 \end{array}$$

$x = -6$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} x + 4y = -2 \\ 1 \times (-6) + 4y = -2 \\ -6 + 4y = -2 \\ 4y = 4 \\ y = 1 \end{array}$$

答え $x = -6, y = 1$

$$\begin{cases} -x - 2y = 6 \\ 2x + 5y = -17 \end{cases}$$

$$\begin{cases} -6x - 6y = 18 \\ x + 3y = -1 \end{cases}$$

解き方1 x を消去する解き方

$$\begin{cases} -x - 2y = 6 & \cdots\cdots\textcircled{1} \\ 2x + 5y = -17 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 2 \quad -2x - 4y = 12 \\ \textcircled{2} \quad \quad +) \quad 2x + 5y = -17 \\ \hline \quad \quad \quad y = -5 \\ \quad \quad \quad y = -5 \end{array}$$

$y = -5$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -x - 2y = 6 \\ -x - 2 \times (-5) = 6 \\ -x + 10 = 6 \\ -x = -4 \\ x = 4 \end{array}$$

答え $x = 4, y = -5$

解き方1 x を消去する解き方

$$\begin{cases} -6x - 6y = 18 & \cdots\cdots\textcircled{1} \\ x + 3y = -1 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad \quad -6x - 6y = 18 \\ \textcircled{2} \times 6 \quad +) \quad 6x + 18y = -6 \\ \hline \quad \quad \quad 12y = 12 \\ \quad \quad \quad y = 1 \end{array}$$

$y = 1$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} x + 3y = -1 \\ x + 3 \times 1 = -1 \\ x + 3 = -1 \\ x = -4 \end{array}$$

答え $x = -4, y = 1$

解き方2 y を消去する解き方

$$\begin{cases} -x - 2y = 6 & \cdots\cdots\textcircled{1} \\ 2x + 5y = -17 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \times 5 \quad -5x - 10y = 30 \\ \textcircled{2} \times 2 \quad +) \quad 4x + 10y = -34 \\ \hline \quad \quad -x \quad \quad = -4 \\ \quad \quad \quad x = 4 \end{array}$$

$x = 4$ を $\textcircled{1}$ に代入すると

$$\begin{array}{r} -x - 2y = 6 \\ -1 \times 4 - 2y = 6 \\ -4 - 2y = 6 \\ -2y = 10 \\ y = -5 \end{array}$$

答え $x = 4, y = -5$

解き方2 y を消去する解き方

$$\begin{cases} -6x - 6y = 18 & \cdots\cdots\textcircled{1} \\ x + 3y = -1 & \cdots\cdots\textcircled{2} \end{cases}$$

$$\begin{array}{r} \textcircled{1} \quad \quad -6x - 6y = 18 \\ \textcircled{2} \times 2 \quad +) \quad 2x + 6y = -2 \\ \hline \quad \quad -4x \quad \quad = 16 \\ \quad \quad \quad x = -4 \end{array}$$

$x = -4$ を $\textcircled{2}$ に代入すると

$$\begin{array}{r} x + 3y = -1 \\ 1 \times (-4) + 3y = -1 \\ -4 + 3y = -1 \\ 3y = 3 \\ y = 1 \end{array}$$

答え $x = -4, y = 1$

$$\begin{cases} 6x - 6y = -6 \\ 6x - 4y = 12 \end{cases}$$

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

解き方 x を消去する解き方

$$\begin{cases} 6x - 6y = -6 & \cdots\cdots\text{①} \\ 6x - 4y = 12 & \cdots\cdots\text{②} \end{cases}$$

$$\begin{array}{r} \text{①} \quad 6x - 6y = -6 \\ \text{②} \quad -) 6x - 4y = 12 \\ \hline \quad \quad -2y = -18 \\ \quad \quad \quad y = 9 \end{array}$$

$y = 9$ を②に代入すると

$$\begin{aligned} 6x - 4y &= 12 \\ 6x - 4 \times 9 &= 12 \\ 6x - 36 &= 12 \\ 6x &= 48 \\ x &= 8 \end{aligned}$$

答え $x = 8, y = 9$

解き方 x を消去する解き方

$$\begin{cases} x + 2y = 3 & \cdots\cdots\text{①} \\ x + 4y = -1 & \cdots\cdots\text{②} \end{cases}$$

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

$y = -2$ を①に代入すると

$$\begin{aligned} x + 2y &= 3 \\ x + 2 \times (-2) &= 3 \\ x - 4 &= 3 \\ x &= 7 \end{aligned}$$

答え $x = 7, y = -2$

参考 y を消去する解き方

$$\begin{cases} 6x - 6y = -6 & \cdots\cdots\text{①} \\ 6x - 4y = 12 & \cdots\cdots\text{②} \end{cases}$$

$$\begin{array}{r} \text{①} \times 2 \quad 12x - 12y = -12 \\ \text{②} \times 3 \quad -) 18x - 12y = 36 \\ \hline \quad \quad -6x \quad \quad = -48 \\ \quad \quad \quad x = 8 \end{array}$$

$x = 8$ を①に代入すると

$$\begin{aligned} 6x - 6y &= -6 \\ 6 \times 8 - 6y &= -6 \\ 48 - 6y &= -6 \\ -6y &= -54 \\ y &= 9 \end{aligned}$$

答え $x = 8, y = 9$

参考 y を消去する解き方

$$\begin{cases} x + 2y = 3 & \cdots\cdots\text{①} \\ x + 4y = -1 & \cdots\cdots\text{②} \end{cases}$$

$$\begin{array}{r} \text{①} \times 2 \quad 2x + 4y = 6 \\ \text{②} \quad -) x + 4y = -1 \\ \hline \quad \quad x \quad \quad = 7 \\ \quad \quad \quad x = 7 \end{array}$$

$x = 7$ を①に代入すると

$$\begin{aligned} x + 2y &= 3 \\ 1 \times 7 + 2y &= 3 \\ 7 + 2y &= 3 \\ 2y &= -4 \\ y &= -2 \end{aligned}$$

答え $x = 7, y = -2$

$$\begin{cases} -2x + 7y = 4 \\ x - 6y = -7 \end{cases}$$

$$\begin{cases} x - 4y = -5 \\ 2x - 7y = -11 \end{cases}$$

解き方1 x を消去する解き方

$$\begin{cases} -2x + 7y = 4 & \dots\dots ① \\ x - 6y = -7 & \dots\dots ② \end{cases}$$

$$\begin{array}{r} ① \quad -2x + 7y = 4 \\ ② \times 2 \quad +) \quad 2x - 12y = -14 \\ \hline \quad \quad \quad -5y = -10 \\ \quad \quad \quad y = 2 \end{array}$$

$y = 2$ を①に代入すると

$$\begin{array}{r} -2x + 7y = 4 \\ -2x + 7 \times 2 = 4 \\ -2x + 14 = 4 \\ -2x = -10 \\ x = 5 \end{array}$$

答え $x = 5, y = 2$

解き方1 x を消去する解き方

$$\begin{cases} x - 4y = -5 & \dots\dots ① \\ 2x - 7y = -11 & \dots\dots ② \end{cases}$$

$$\begin{array}{r} ① \times 2 \quad 2x - 8y = -10 \\ ② \quad -) \quad 2x - 7y = -11 \\ \hline \quad \quad \quad -y = 1 \\ \quad \quad \quad y = -1 \end{array}$$

$y = -1$ を①に代入すると

$$\begin{array}{r} x - 4y = -5 \\ x - 4 \times (-1) = -5 \\ x + 4 = -5 \\ x = -9 \end{array}$$

答え $x = -9, y = -1$

解き方2 y を消去する解き方

$$\begin{cases} -2x + 7y = 4 & \dots\dots ① \\ x - 6y = -7 & \dots\dots ② \end{cases}$$

$$\begin{array}{r} ① \times 6 \quad -12x + 42y = 24 \\ ② \times 7 \quad +) \quad 7x - 42y = -49 \\ \hline \quad \quad \quad -5x = -25 \\ \quad \quad \quad x = 5 \end{array}$$

$x = 5$ を②に代入すると

$$\begin{array}{r} x - 6y = -7 \\ 1 \times 5 - 6y = -7 \\ 5 - 6y = -7 \\ -6y = -12 \\ y = 2 \end{array}$$

答え $x = 5, y = 2$

解き方2 y を消去する解き方

$$\begin{cases} x - 4y = -5 & \dots\dots ① \\ 2x - 7y = -11 & \dots\dots ② \end{cases}$$

$$\begin{array}{r} ① \times 7 \quad 7x - 28y = -35 \\ ② \times 4 \quad -) \quad 8x - 28y = -44 \\ \hline \quad \quad \quad -x = 9 \\ \quad \quad \quad x = -9 \end{array}$$

$x = -9$ を①に代入すると

$$\begin{array}{r} x - 4y = -5 \\ 1 \times (-9) - 4y = -5 \\ -9 - 4y = -5 \\ -4y = 4 \\ y = -1 \end{array}$$

答え $x = -9, y = -1$