

すきプリ 中学数学

連立方程式の問題【小数】

もくじ

連立方程式の問題【小数1】

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連立方程式の問題【小数まとめ】

問題

小数を含む連立方程式を解いてみましょう。

$$\begin{cases} -0.06x - 0.05y = -0.1 \\ x + 2y = -3 \end{cases}$$

$$\begin{cases} -2x - y = -24 \\ 0.1x - 0.1y = 1.5 \end{cases}$$

$$\begin{cases} -0.06x - 0.05y = -0.1 & \dots\dots\textcircled{1} \\ x + 2y = -3 & \dots\dots\textcircled{2} \end{cases}$$

$$\begin{cases} -2x - y = -24 & \dots\dots\textcircled{1} \\ 0.1x - 0.1y = 1.5 & \dots\dots\textcircled{2} \end{cases}$$

①の両辺に 100 をかけると

$$\begin{aligned} (-0.06x - 0.05y) \times 100 &= -0.1 \times 100 \\ -6x - 5y &= -10 & \dots\dots\textcircled{3} \end{aligned}$$

$$\textcircled{3} \quad -6x - 5y = -10$$

$$\textcircled{2} \times 6 \quad +) \quad 6x + 12y = -18$$

$$\hline 7y = -28$$

$$y = -4$$

$y = -4$ を ② に代入すると

$$x + 2y = -3$$

$$x + 2 \times (-4) = -3$$

$$x - 8 = -3$$

$$x = 5$$

答え $x = 5, y = -4$

②の両辺に 10 をかけると

$$\begin{aligned} (0.1x - 0.1y) \times 10 &= 1.5 \times 10 \\ x - y &= 15 & \dots\dots\textcircled{3} \end{aligned}$$

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

$$\textcircled{3} \quad -) \quad x - y = 15$$

$$\hline -3x = -39$$

$$x = 13$$

$x = 13$ を ③ に代入すると

$$x - y = 15$$

$$1 \times 13 - y = 15$$

$$13 - y = 15$$

$$-y = 2$$

$$y = -2$$

答え $x = 13, y = -2$

$$\begin{cases} x - y = -9 \\ 0.1x + 0.1y = -1.1 \end{cases}$$

$$\begin{cases} -2x - y = -13 \\ -0.01x + 0.03y = 0.18 \end{cases}$$

$$\begin{cases} x - y = -9 & \dots\dots\textcircled{1} \\ 0.1x + 0.1y = -1.1 & \dots\dots\textcircled{2} \end{cases}$$

②の両辺に 10 をかけると

$$(0.1x + 0.1y) \times 10 = -1.1 \times 10$$

$$x + y = -11 \quad \dots\dots\textcircled{3}$$

$$\textcircled{1} \quad x - y = -9$$

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

$$y = -1$$

$y = -1$ を①に代入すると

$$x - y = -9$$

$$x - 1 \times (-1) = -9$$

$$x + 1 = -9$$

$$x = -10$$

答え $x = -10, y = -1$

$$\begin{cases} -2x - y = -13 & \dots\dots\textcircled{1} \\ -0.01x + 0.03y = 0.18 & \dots\dots\textcircled{2} \end{cases}$$

②の両辺に 100 をかけると

$$(-0.01x + 0.03y) \times 100 = 0.18 \times 100$$

$$-x + 3y = 18 \quad \dots\dots\textcircled{3}$$

$$\textcircled{1} \quad -2x - y = -13$$

$$\textcircled{3} \times 2 \quad \begin{array}{r} -) -2x + 6y = 36 \\ \hline -7y = -49 \end{array}$$

$$y = 7$$

$y = 7$ を①に代入すると

$$-2x - y = -13$$

$$-2x - 1 \times 7 = -13$$

$$-2x - 7 = -13$$

$$-2x = -6$$

$$x = 3$$

答え $x = 3, y = 7$

$$\begin{cases} -0.01x + 0.01y = -0.07 \\ 4x + y = 13 \end{cases}$$

$$\begin{cases} -x - y = 1 \\ -0.01x - 0.02y = 0.1 \end{cases}$$

$$\begin{cases} -0.01x + 0.01y = -0.07 & \dots\dots ① \\ 4x + y = 13 & \dots\dots ② \end{cases}$$

$$\begin{cases} -x - y = 1 & \dots\dots ① \\ -0.01x - 0.02y = 0.1 & \dots\dots ② \end{cases}$$

①の両辺に 100 をかけると

$$\begin{aligned} (-0.01x + 0.01y) \times 100 &= -0.07 \times 100 \\ -x + y &= -7 & \dots\dots ③ \end{aligned}$$

$$③ \quad -x + y = -7$$

$$② \quad \begin{array}{r} -) 4x + y = 13 \\ \hline -5x \quad = -20 \end{array}$$

$$x = 4$$

$x = 4$ を ③ に代入すると

$$-x + y = -7$$

$$-1 \times 4 + y = -7$$

$$-4 + y = -7$$

$$y = -3$$

答え $x = 4, y = -3$

②の両辺に 100 をかけると

$$\begin{aligned} (-0.01x - 0.02y) \times 100 &= 0.1 \times 100 \\ -x - 2y &= 10 & \dots\dots ③ \end{aligned}$$

$$① \quad -x - y = 1$$

$$③ \quad \begin{array}{r} -) -x - 2y = 10 \\ \hline y = -9 \end{array}$$

$$y = -9$$

$y = -9$ を ① に代入すると

$$-x - y = 1$$

$$-x - 1 \times (-9) = 1$$

$$-x + 9 = 1$$

$$-x = -8$$

$$x = 8$$

答え $x = 8, y = -9$

$$\begin{cases} -7x + 8y = 28 \\ 0.1x - 0.1y = -0.3 \end{cases}$$

$$\begin{cases} -x - y = 5 \\ 0.6x + 0.5y = -2.4 \end{cases}$$

$$\begin{cases} -7x + 8y = 28 & \dots\dots\textcircled{1} \\ 0.1x - 0.1y = -0.3 & \dots\dots\textcircled{2} \end{cases}$$

②の両辺に 10 をかけると

$$(0.1x - 0.1y) \times 10 = -0.3 \times 10$$

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

$$\begin{array}{r} \textcircled{1} \quad -7x + 8y = 28 \\ \textcircled{3} \times 7 \quad +) \quad 7x - 7y = -21 \\ \hline \quad \quad \quad y = 7 \\ \quad \quad \quad y = 7 \end{array}$$

$y = 7$ を③に代入すると

$$x - y = -3$$

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

$$x - 7 = -3$$

$$x = 4$$

答え $x = 4, y = 7$

$$\begin{cases} -x - y = 5 & \dots\dots\textcircled{1} \\ 0.6x + 0.5y = -2.4 & \dots\dots\textcircled{2} \end{cases}$$

②の両辺に 10 をかけると

$$(0.6x + 0.5y) \times 10 = -2.4 \times 10$$

$$6x + 5y = -24 \quad \dots\dots\textcircled{3}$$

$$\begin{array}{r} \textcircled{1} \times 5 \quad -5x - 5y = 25 \\ \textcircled{3} \quad +) \quad 6x + 5y = -24 \\ \hline \quad \quad \quad x = 1 \\ \quad \quad \quad x = 1 \end{array}$$

$x = 1$ を①に代入すると

$$-x - y = 5$$

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

$$-1 - y = 5$$

$$-y = 6$$

$$y = -6$$

答え $x = 1, y = -6$

$$\begin{cases} -0.01x - 0.01y = -0.01 \\ -2x - 3y = -8 \end{cases}$$

$$\begin{cases} -0.1x + 0.1y = -0.8 \\ 2x - y = 18 \end{cases}$$

$$\begin{cases} -0.01x - 0.01y = -0.01 & \dots\dots ① \\ -2x - 3y = -8 & \dots\dots ② \end{cases}$$

$$\begin{cases} -0.1x + 0.1y = -0.8 & \dots\dots ① \\ 2x - y = 18 & \dots\dots ② \end{cases}$$

①の両辺に 100 をかけると

$$\begin{aligned} (-0.01x - 0.01y) \times 100 &= -0.01 \times 100 \\ -x - y &= -1 & \dots\dots ③ \end{aligned}$$

$$③ \times 2 \quad -2x - 2y = -2$$

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

$$y = 6$$

$y = 6$ を ③ に代入すると

$$-x - y = -1$$

$$-x - 1 \times 6 = -1$$

$$-x - 6 = -1$$

$$-x = 5$$

$$x = -5$$

答え $x = -5, y = 6$

①の両辺に 10 をかけると

$$\begin{aligned} (-0.1x + 0.1y) \times 10 &= -0.8 \times 10 \\ -x + y &= -8 & \dots\dots ③ \end{aligned}$$

$$③ \quad -x + y = -8$$

$$② \quad \begin{array}{r} +) 2x - y = 18 \\ \hline x = 10 \end{array}$$

$$x = 10$$

$x = 10$ を ③ に代入すると

$$-x + y = -8$$

$$-1 \times 10 + y = -8$$

$$-10 + y = -8$$

$$y = 2$$

答え $x = 10, y = 2$

$$\begin{cases} -5x + 8y = 6 \\ -0.02x + 0.03y = 0.04 \end{cases}$$

$$\begin{cases} -2x + 3y = -29 \\ -0.01x + 0.01y = -0.14 \end{cases}$$

$$\begin{cases} -5x + 8y = 6 & \dots\dots ① \\ -0.02x + 0.03y = 0.04 & \dots\dots ② \end{cases}$$

②の両辺に 100 をかけると

$$\begin{aligned} (-0.02x + 0.03y) \times 100 &= 0.04 \times 100 \\ -2x + 3y &= 4 \quad \dots\dots ③ \end{aligned}$$

$$① \times 2 \quad -10x + 16y = 12$$

$$③ \times 5 \quad \underline{-) -10x + 15y = 20}$$

$$y = -8$$

$$y = -8$$

$y = -8$ を ③ に代入すると

$$-2x + 3y = 4$$

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

$$-2x - 24 = 4$$

$$-2x = 28$$

$$x = -14$$

答え $x = -14, y = -8$

$$\begin{cases} -2x + 3y = -29 & \dots\dots ① \\ -0.01x + 0.01y = -0.14 & \dots\dots ② \end{cases}$$

②の両辺に 100 をかけると

$$\begin{aligned} (-0.01x + 0.01y) \times 100 &= -0.14 \times 100 \\ -x + y &= -14 \quad \dots\dots ③ \end{aligned}$$

$$① \quad -2x + 3y = -29$$

$$③ \times 2 \quad \underline{-) -2x + 2y = -28}$$

$$y = -1$$

$$y = -1$$

$y = -1$ を ③ に代入すると

$$-x + y = -14$$

$$-x + 1 \times (-1) = -14$$

$$-x - 1 = -14$$

$$-x = -13$$

$$x = 13$$

答え $x = 13, y = -1$

$$\begin{cases} -3x - 4y = -5 \\ 0.2x + 0.3y = 0.4 \end{cases}$$

$$\begin{cases} 0.1x + 0.1y = 0.5 \\ 3x + 2y = 18 \end{cases}$$

$$\begin{cases} -3x - 4y = -5 & \dots\dots ① \\ 0.2x + 0.3y = 0.4 & \dots\dots ② \end{cases}$$

②の両辺に 10 をかけると

$$(0.2x + 0.3y) \times 10 = 0.4 \times 10 \\ 2x + 3y = 4 \quad \dots\dots ③$$

$$① \times 2 \quad -6x - 8y = -10$$

$$③ \times 3 \quad +) \quad \underline{6x + 9y = 12} \\ y = 2$$

$$y = 2$$

$y = 2$ を ③ に代入すると

$$2x + 3y = 4$$

$$2x + 3 \times 2 = 4$$

$$2x + 6 = 4$$

$$2x = -2$$

$$x = -1$$

答え $x = -1, y = 2$

$$\begin{cases} 0.1x + 0.1y = 0.5 & \dots\dots ① \\ 3x + 2y = 18 & \dots\dots ② \end{cases}$$

①の両辺に 10 をかけると

$$(0.1x + 0.1y) \times 10 = 0.5 \times 10 \\ x + y = 5 \quad \dots\dots ③$$

$$③ \times 2 \quad 2x + 2y = 10$$

$$② \quad -) \quad \underline{3x + 2y = 18} \\ -x = -8$$

$$x = 8$$

$x = 8$ を ③ に代入すると

$$x + y = 5$$

$$1 \times 8 + y = 5$$

$$8 + y = 5$$

$$y = -3$$

答え $x = 8, y = -3$

$$\begin{cases} x - 3y = 8 \\ 0.1x + 0.3y = -2.2 \end{cases}$$

$$\begin{cases} x - y = -4 \\ 0.2x + 0.5y = 3.4 \end{cases}$$

$$\begin{cases} x - 3y = 8 & \dots\dots ① \\ 0.1x + 0.3y = -2.2 & \dots\dots ② \end{cases}$$

②の両辺に10をかけると

$$(0.1x + 0.3y) \times 10 = -2.2 \times 10$$

$$x + 3y = -22 \quad \dots\dots ③$$

$$① \quad x - 3y = 8$$

$$③ \quad \begin{array}{r} -)x + 3y = -22 \\ \hline -6y = 30 \end{array}$$

$$y = -5$$

$y = -5$ を①に代入すると

$$x - 3y = 8$$

$$x - 3 \times (-5) = 8$$

$$x + 15 = 8$$

$$x = -7$$

答え $x = -7, y = -5$

$$\begin{cases} x - y = -4 & \dots\dots ① \\ 0.2x + 0.5y = 3.4 & \dots\dots ② \end{cases}$$

②の両辺に10をかけると

$$(0.2x + 0.5y) \times 10 = 3.4 \times 10$$

$$2x + 5y = 34 \quad \dots\dots ③$$

$$① \times 2 \quad 2x - 2y = -8$$

$$③ \quad \begin{array}{r} -)2x + 5y = 34 \\ \hline -7y = -42 \end{array}$$

$$y = 6$$

$y = 6$ を①に代入すると

$$x - y = -4$$

$$x - 1 \times 6 = -4$$

$$x - 6 = -4$$

$$x = 2$$

答え $x = 2, y = 6$

$$\begin{cases} -4x - 3y = 0 \\ -0.1x - 0.1y = -0.2 \end{cases}$$

$$\begin{cases} -0.02x - 0.03y = 0.06 \\ x + y = -5 \end{cases}$$

$$\begin{cases} -4x - 3y = 0 & \dots\dots ① \\ -0.1x - 0.1y = -0.2 & \dots\dots ② \end{cases}$$

②の両辺に 10 をかけると

$$\begin{aligned} (-0.1x - 0.1y) \times 10 &= -0.2 \times 10 \\ -x - y &= -2 \quad \dots\dots ③ \end{aligned}$$

$$\begin{array}{r} ① \quad -4x - 3y = 0 \\ ③ \times 3 \quad -) -3x - 3y = -6 \\ \hline -x \quad \quad = 6 \\ \quad \quad \quad x = -6 \end{array}$$

$x = -6$ を①に代入すると

$$\begin{aligned} -4x - 3y &= 0 \\ -4 \times (-6) - 3y &= 0 \\ 24 - 3y &= 0 \\ -3y &= -24 \\ y &= 8 \end{aligned}$$

答え $x = -6, y = 8$

$$\begin{cases} -0.02x - 0.03y = 0.06 & \dots\dots ① \\ x + y = -5 & \dots\dots ② \end{cases}$$

①の両辺に 100 をかけると

$$\begin{aligned} (-0.02x - 0.03y) \times 100 &= 0.06 \times 100 \\ -2x - 3y &= 6 \quad \dots\dots ③ \end{aligned}$$

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

$y = 4$ を②に代入すると

$$\begin{aligned} x + y &= -5 \\ x + 1 \times 4 &= -5 \\ x + 4 &= -5 \\ x &= -9 \end{aligned}$$

答え $x = -9, y = 4$

$$\begin{cases} -0.3x - 0.4y = 3.2 \\ x - 2y = -4 \end{cases}$$

$$\begin{cases} -0.02x - 0.01y = -0.06 \\ -x - 2y = 3 \end{cases}$$

$$\begin{cases} -0.3x - 0.4y = 3.2 & \dots\dots ① \\ x - 2y = -4 & \dots\dots ② \end{cases}$$

①の両辺に 10 をかけると

$$\begin{aligned} (-0.3x - 0.4y) \times 10 &= 3.2 \times 10 \\ -3x - 4y &= 32 & \dots\dots ③ \end{aligned}$$

$$\begin{array}{r} ③ \quad -3x - 4y = 32 \\ ② \times 2 \quad -) \quad 2x - 4y = -8 \\ \hline -5x \quad \quad = 40 \\ x = -8 \end{array}$$

$x = -8$ を ② に代入すると

$$\begin{aligned} x - 2y &= -4 \\ 1 \times (-8) - 2y &= -4 \\ -8 - 2y &= -4 \\ -2y &= 4 \\ y &= -2 \end{aligned}$$

答え $x = -8, y = -2$

$$\begin{cases} -0.02x - 0.01y = -0.06 & \dots\dots ① \\ -x - 2y = 3 & \dots\dots ② \end{cases}$$

①の両辺に 100 をかけると

$$\begin{aligned} (-0.02x - 0.01y) \times 100 &= -0.06 \times 100 \\ -2x - y &= -6 & \dots\dots ③ \end{aligned}$$

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

$y = -4$ を ③ に代入すると

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

答え $x = 5, y = -4$

$$\begin{cases} x - 2y = 2 \\ 0.03x - 0.02y = 0.3 \end{cases}$$

$$\begin{cases} -3x + 5y = -4 \\ -0.02x + 0.03y = -0.04 \end{cases}$$

$$\begin{cases} x - 2y = 2 & \dots\dots① \\ 0.03x - 0.02y = 0.3 & \dots\dots② \end{cases}$$

②の両辺に 100 をかけると

$$(0.03x - 0.02y) \times 100 = 0.3 \times 100$$

$$3x - 2y = 30 \quad \dots\dots③$$

$$\begin{array}{r} ① \quad x - 2y = 2 \\ ③ \quad -) \quad 3x - 2y = 30 \\ \hline \quad -2x \quad = -28 \\ \quad \quad \quad x = 14 \end{array}$$

$x = 14$ を①に代入すると

$$\begin{aligned} x - 2y &= 2 \\ 1 \times 14 - 2y &= 2 \\ 14 - 2y &= 2 \\ -2y &= -12 \\ y &= 6 \end{aligned}$$

答え $x = 14, y = 6$

$$\begin{cases} -3x + 5y = -4 & \dots\dots① \\ -0.02x + 0.03y = -0.04 & \dots\dots② \end{cases}$$

②の両辺に 100 をかけると

$$(-0.02x + 0.03y) \times 100 = -0.04 \times 100$$

$$-2x + 3y = -4 \quad \dots\dots③$$

$$\begin{array}{r} ① \times 2 \quad -6x + 10y = -8 \\ ③ \times 3 \quad -) \quad -6x + 9y = -12 \\ \hline \quad \quad \quad y = 4 \\ \quad \quad \quad y = 4 \end{array}$$

$y = 4$ を③に代入すると

$$\begin{aligned} -2x + 3y &= -4 \\ -2x + 3 \times 4 &= -4 \\ -2x + 12 &= -4 \\ -2x &= -16 \\ x &= 8 \end{aligned}$$

答え $x = 8, y = 4$

$$\begin{cases} -0.1x + 0.4y = -3.3 \\ x - y = 3 \end{cases}$$

$$\begin{cases} -x - y = -2 \\ -0.01x - 0.03y = 0.22 \end{cases}$$

$$\begin{cases} -0.1x + 0.4y = -3.3 & \dots\dots ① \\ x - y = 3 & \dots\dots ② \end{cases}$$

①の両辺に 10 をかけると

$$\begin{aligned} (-0.1x + 0.4y) \times 10 &= -3.3 \times 10 \\ -x + 4y &= -33 & \dots\dots ③ \end{aligned}$$

$$③ \quad -x + 4y = -33$$

$$② \quad +) \quad x - y = 3$$

$$\hline 3y = -30$$

$$y = -10$$

$y = -10$ を ② に代入すると

$$x - y = 3$$

$$x - 1 \times (-10) = 3$$

$$x + 10 = 3$$

$$x = -7$$

答え $x = -7, y = -10$

$$\begin{cases} -x - y = -2 & \dots\dots ① \\ -0.01x - 0.03y = 0.22 & \dots\dots ② \end{cases}$$

②の両辺に 100 をかけると

$$\begin{aligned} (-0.01x - 0.03y) \times 100 &= 0.22 \times 100 \\ -x - 3y &= 22 & \dots\dots ③ \end{aligned}$$

$$① \quad -x - y = -2$$

$$③ \quad -) \quad -x - 3y = 22$$

$$\hline 2y = -24$$

$$y = -12$$

$y = -12$ を ① に代入すると

$$-x - y = -2$$

$$-x - 1 \times (-12) = -2$$

$$-x + 12 = -2$$

$$-x = -14$$

$$x = 14$$

答え $x = 14, y = -12$

$$\begin{cases} -7x - 8y = -49 \\ -0.07x - 0.02y = -0.07 \end{cases}$$

$$\begin{cases} -0.3x + 0.4y = -1 \\ x - y = 0 \end{cases}$$

$$\begin{cases} -7x - 8y = -49 & \dots\dots ① \\ -0.07x - 0.02y = -0.07 & \dots\dots ② \end{cases}$$

$$\begin{cases} -0.3x + 0.4y = -1 & \dots\dots ① \\ x - y = 0 & \dots\dots ② \end{cases}$$

②の両辺に 100 をかけると

$$\begin{aligned} (-0.07x - 0.02y) \times 100 &= -0.07 \times 100 \\ -7x - 2y &= -7 \quad \dots\dots ③ \end{aligned}$$

$$① \quad -7x - 8y = -49$$

$$③ \quad \begin{array}{r} -) -7x - 2y = -7 \\ \hline -6y = -42 \end{array}$$

$$y = 7$$

$y = 7$ を ③ に代入すると

$$-7x - 2y = -7$$

$$-7x - 2 \times 7 = -7$$

$$-7x - 14 = -7$$

$$-7x = 7$$

$$x = -1$$

答え $x = -1, y = 7$

①の両辺に 10 をかけると

$$\begin{aligned} (-0.3x + 0.4y) \times 10 &= -1 \times 10 \\ -3x + 4y &= -10 \quad \dots\dots ③ \end{aligned}$$

$$③ \quad -3x + 4y = -10$$

$$② \times 3 \quad \begin{array}{r} +) 3x - 3y = 0 \\ \hline y = -10 \end{array}$$

$$y = -10$$

$y = -10$ を ② に代入すると

$$x - y = 0$$

$$x - 1 \times (-10) = 0$$

$$x + 10 = 0$$

$$x = -10$$

答え $x = -10, y = -10$

$$\begin{cases} x - 2y = 5 \\ 0.1x + 0.1y = -2.2 \end{cases}$$

$$\begin{cases} -0.1x + 0.1y = 0.1 \\ 3x - y = -5 \end{cases}$$

$$\begin{cases} x - 2y = 5 & \dots\dots\textcircled{1} \\ 0.1x + 0.1y = -2.2 & \dots\dots\textcircled{2} \end{cases}$$

②の両辺に 10 をかけると

$$(0.1x + 0.1y) \times 10 = -2.2 \times 10$$

$$x + y = -22 \quad \dots\dots\textcircled{3}$$

$$\textcircled{1} \quad x - 2y = 5$$

$$\textcircled{3} \quad \begin{array}{r} -) x + y = -22 \\ \hline -3y = 27 \end{array}$$

$$y = -9$$

$y = -9$ を①に代入すると

$$x - 2y = 5$$

$$x - 2 \times (-9) = 5$$

$$x + 18 = 5$$

$$x = -13$$

答え $x = -13, y = -9$

$$\begin{cases} -0.1x + 0.1y = 0.1 & \dots\dots\textcircled{1} \\ 3x - y = -5 & \dots\dots\textcircled{2} \end{cases}$$

①の両辺に 10 をかけると

$$(-0.1x + 0.1y) \times 10 = 0.1 \times 10$$

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

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

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

$$x = -2$$

$x = -2$ を③に代入すると

$$-x + y = 1$$

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

$$2 + y = 1$$

$$y = -1$$

答え $x = -2, y = -1$

問題

小数を含む連立方程式を解いてみましょう。

$$\begin{cases} -0.01x + 0.01y = -0.05 \\ -0.1x + 0.3y = -1.3 \end{cases}$$

$$\begin{cases} -0.1x + 0.4y = 2.4 \\ -0.01x + 0.08y = 0.36 \end{cases}$$

$$\begin{cases} -0.01x + 0.01y = -0.05 & \dots\dots ① \\ -0.1x + 0.3y = -1.3 & \dots\dots ② \end{cases}$$

①の両辺に 100 をかけると
 $(-0.01x + 0.01y) \times 100 = -0.05 \times 100$
 $-x + y = -5 \quad \dots\dots ③$

②の両辺に 10 をかけると
 $(-0.1x + 0.3y) \times 10 = -1.3 \times 10$
 $-x + 3y = -13 \quad \dots\dots ④$

$$③ \quad -x + y = -5$$

$$④ \quad \begin{array}{r} -) -x + 3y = -13 \\ \underline{-2y = 8} \end{array}$$

$$y = -4$$

$y = -4$ を ③ に代入すると

$$\begin{aligned} -x + y &= -5 \\ -x + 1 \times (-4) &= -5 \\ -x - 4 &= -5 \\ -x &= -1 \\ x &= 1 \end{aligned}$$

答え $x = 1, y = -4$

$$\begin{cases} -0.1x + 0.4y = 2.4 & \dots\dots ① \\ -0.01x + 0.08y = 0.36 & \dots\dots ② \end{cases}$$

①の両辺に 10 をかけると
 $(-0.1x + 0.4y) \times 10 = 2.4 \times 10$
 $-x + 4y = 24 \quad \dots\dots ③$

②の両辺に 100 をかけると
 $(-0.01x + 0.08y) \times 100 = 0.36 \times 100$
 $-x + 8y = 36 \quad \dots\dots ④$

$$③ \quad -x + 4y = 24$$

$$④ \quad \begin{array}{r} -) -x + 8y = 36 \\ \underline{-4y = -12} \end{array}$$

$$y = 3$$

$y = 3$ を ③ に代入すると

$$\begin{aligned} -x + 4y &= 24 \\ -x + 4 \times 3 &= 24 \\ -x + 12 &= 24 \\ -x &= 12 \\ x &= -12 \end{aligned}$$

答え $x = -12, y = 3$

$$\begin{cases} -0.4x + 0.1y = 3.4 \\ -0.1x + 0.1y = 0.7 \end{cases}$$

$$\begin{cases} -0.03x + 0.02y = 0.08 \\ 0.01x - 0.01y = -0.05 \end{cases}$$

$$\begin{cases} -0.4x + 0.1y = 3.4 & \dots\dots\textcircled{1} \\ -0.1x + 0.1y = 0.7 & \dots\dots\textcircled{2} \end{cases}$$

①の両辺に10をかけると

$$\begin{aligned} (-0.4x + 0.1y) \times 10 &= 3.4 \times 10 \\ -4x + y &= 34 & \dots\dots\textcircled{3} \end{aligned}$$

②の両辺に10をかけると

$$\begin{aligned} (-0.1x + 0.1y) \times 10 &= 0.7 \times 10 \\ -x + y &= 7 & \dots\dots\textcircled{4} \end{aligned}$$

$$\textcircled{3} \quad -4x + y = 34$$

$$\textcircled{4} \quad \begin{array}{r} -) -x + y = 7 \\ \hline -3x \quad = 27 \end{array}$$

$$x = -9$$

$x = -9$ を④に代入すると

$$\begin{aligned} -x + y &= 7 \\ -1 \times (-9) + y &= 7 \\ 9 + y &= 7 \\ y &= -2 \end{aligned}$$

答え $x = -9, y = -2$

$$\begin{cases} -0.03x + 0.02y = 0.08 & \dots\dots\textcircled{1} \\ 0.01x - 0.01y = -0.05 & \dots\dots\textcircled{2} \end{cases}$$

①の両辺に100をかけると

$$\begin{aligned} (-0.03x + 0.02y) \times 100 &= 0.08 \times 100 \\ -3x + 2y &= 8 & \dots\dots\textcircled{3} \end{aligned}$$

②の両辺に100をかけると

$$\begin{aligned} (0.01x - 0.01y) \times 100 &= -0.05 \times 100 \\ x - y &= -5 & \dots\dots\textcircled{4} \end{aligned}$$

$$\textcircled{3} \quad -3x + 2y = 8$$

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

$$x = 2$$

$x = 2$ を④に代入すると

$$\begin{aligned} x - y &= -5 \\ 1 \times 2 - y &= -5 \\ 2 - y &= -5 \\ -y &= -7 \\ y &= 7 \end{aligned}$$

答え $x = 2, y = 7$

$$\begin{cases} -0.07x - 0.08y = -0.45 \\ -0.01x - 0.01y = -0.05 \end{cases}$$

$$\begin{cases} -0.01x + 0.01y = 0.11 \\ -0.03x + 0.02y = 0.3 \end{cases}$$

$$\begin{cases} -0.07x - 0.08y = -0.45 & \dots\dots ① \\ -0.01x - 0.01y = -0.05 & \dots\dots ② \end{cases} \quad \begin{cases} -0.01x + 0.01y = 0.11 & \dots\dots ① \\ -0.03x + 0.02y = 0.3 & \dots\dots ② \end{cases}$$

①の両辺に 100 をかけると

$$\begin{aligned} (-0.07x - 0.08y) \times 100 &= -0.45 \times 100 \\ -7x - 8y &= -45 & \dots\dots ③ \end{aligned}$$

②の両辺に 100 をかけると

$$\begin{aligned} (-0.01x - 0.01y) \times 100 &= -0.05 \times 100 \\ -x - y &= -5 & \dots\dots ④ \end{aligned}$$

$$③ \quad -7x - 8y = -45$$

$$④ \times 7 \quad \begin{array}{r} -) -7x - 7y = -35 \\ \hline -y = -10 \end{array}$$

$$y = 10$$

$y = 10$ を ④ に代入すると

$$\begin{aligned} -x - y &= -5 \\ -x - 1 \times 10 &= -5 \\ -x - 10 &= -5 \\ -x &= 5 \\ x &= -5 \end{aligned}$$

答え $x = -5, y = 10$

①の両辺に 100 をかけると

$$\begin{aligned} (-0.01x + 0.01y) \times 100 &= 0.11 \times 100 \\ -x + y &= 11 & \dots\dots ③ \end{aligned}$$

②の両辺に 100 をかけると

$$\begin{aligned} (-0.03x + 0.02y) \times 100 &= 0.3 \times 100 \\ -3x + 2y &= 30 & \dots\dots ④ \end{aligned}$$

$$③ \times 2 \quad -2x + 2y = 22$$

$$④ \quad \begin{array}{r} -) -3x + 2y = 30 \\ \hline x = -8 \end{array}$$

$$x = -8$$

$x = -8$ を ③ に代入すると

$$\begin{aligned} -x + y &= 11 \\ -1 \times (-8) + y &= 11 \\ 8 + y &= 11 \\ y &= 3 \end{aligned}$$

答え $x = -8, y = 3$

$$\begin{cases} -0.1x - 0.1y = 0.4 \\ -0.1x + 0.1y = -2 \end{cases}$$

$$\begin{cases} 0.01x - 0.01y = 0.23 \\ 0.02x - 0.01y = 0.32 \end{cases}$$

$$\begin{cases} -0.1x - 0.1y = 0.4 & \dots\dots ① \\ -0.1x + 0.1y = -2 & \dots\dots ② \end{cases}$$

①の両辺に 10 をかけると

$$\begin{aligned} (-0.1x - 0.1y) \times 10 &= 0.4 \times 10 \\ -x - y &= 4 & \dots\dots ③ \end{aligned}$$

②の両辺に 10 をかけると

$$\begin{aligned} (-0.1x + 0.1y) \times 10 &= -2 \times 10 \\ -x + y &= -20 & \dots\dots ④ \end{aligned}$$

$$③ \quad -x - y = 4$$

$$④ \quad \begin{array}{r} -) -x + y = -20 \\ \hline -2y = 24 \end{array}$$

$$y = -12$$

$y = -12$ を ③ に代入すると

$$\begin{aligned} -x - y &= 4 \\ -x - 1 \times (-12) &= 4 \\ -x + 12 &= 4 \\ -x &= -8 \\ x &= 8 \end{aligned}$$

答え $x = 8, y = -12$

$$\begin{cases} 0.01x - 0.01y = 0.23 & \dots\dots ① \\ 0.02x - 0.01y = 0.32 & \dots\dots ② \end{cases}$$

①の両辺に 100 をかけると

$$\begin{aligned} (0.01x - 0.01y) \times 100 &= 0.23 \times 100 \\ x - y &= 23 & \dots\dots ③ \end{aligned}$$

②の両辺に 100 をかけると

$$\begin{aligned} (0.02x - 0.01y) \times 100 &= 0.32 \times 100 \\ 2x - y &= 32 & \dots\dots ④ \end{aligned}$$

$$③ \quad x - y = 23$$

$$④ \quad \begin{array}{r} -) 2x - y = 32 \\ \hline -x = -9 \end{array}$$

$$x = 9$$

$x = 9$ を ③ に代入すると

$$\begin{aligned} x - y &= 23 \\ 1 \times 9 - y &= 23 \\ 9 - y &= 23 \\ -y &= 14 \\ y &= -14 \end{aligned}$$

答え $x = 9, y = -14$

$$\begin{cases} -0.04x - 0.01y = -0.02 \\ 0.5x + 0.1y = 0.6 \end{cases}$$

$$\begin{cases} 0.1x + 0.2y = -2.2 \\ 0.01x - 0.01y = 0.02 \end{cases}$$

$$\begin{cases} -0.04x - 0.01y = -0.02 & \dots\dots ① \\ 0.5x + 0.1y = 0.6 & \dots\dots ② \end{cases}$$

$$\begin{cases} 0.1x + 0.2y = -2.2 & \dots\dots ① \\ 0.01x - 0.01y = 0.02 & \dots\dots ② \end{cases}$$

①の両辺に 100 をかけると

$$\begin{aligned} (-0.04x - 0.01y) \times 100 &= -0.02 \times 100 \\ -4x - y &= -2 \quad \dots\dots ③ \end{aligned}$$

②の両辺に 10 をかけると

$$\begin{aligned} (0.5x + 0.1y) \times 10 &= 0.6 \times 10 \\ 5x + y &= 6 \quad \dots\dots ④ \end{aligned}$$

$$③ \quad -4x - y = -2$$

$$④ \quad \begin{array}{r} +) \quad 5x + y = 6 \\ \hline x \quad = 4 \end{array}$$

$$x = 4$$

$x = 4$ を ③ に代入すると

$$\begin{aligned} -4x - y &= -2 \\ -4 \times 4 - y &= -2 \\ -16 - y &= -2 \\ -y &= 14 \\ y &= -14 \end{aligned}$$

答え $x = 4, y = -14$

①の両辺に 10 をかけると

$$\begin{aligned} (0.1x + 0.2y) \times 10 &= -2.2 \times 10 \\ x + 2y &= -22 \quad \dots\dots ③ \end{aligned}$$

②の両辺に 100 をかけると

$$\begin{aligned} (0.01x - 0.01y) \times 100 &= 0.02 \times 100 \\ x - y &= 2 \quad \dots\dots ④ \end{aligned}$$

$$③ \quad x + 2y = -22$$

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

$$y = -8$$

$y = -8$ を ④ に代入すると

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

答え $x = -6, y = -8$

$$\begin{cases} 0.02x - 0.03y = 0.21 \\ 0.4x + 0.1y = 0.7 \end{cases}$$

$$\begin{cases} -0.01x + 0.01y = -0.02 \\ 0.3x + 0.2y = 2.6 \end{cases}$$

$$\begin{cases} 0.02x - 0.03y = 0.21 & \dots\dots\textcircled{1} \\ 0.4x + 0.1y = 0.7 & \dots\dots\textcircled{2} \end{cases}$$

①の両辺に 100 をかけると

$$\begin{aligned} (0.02x - 0.03y) \times 100 &= 0.21 \times 100 \\ 2x - 3y &= 21 & \dots\dots\textcircled{3} \end{aligned}$$

②の両辺に 10 をかけると

$$\begin{aligned} (0.4x + 0.1y) \times 10 &= 0.7 \times 10 \\ 4x + y &= 7 & \dots\dots\textcircled{4} \end{aligned}$$

$$\textcircled{3} \times 2 \quad 4x - 6y = 42$$

$$\textcircled{4} \quad \begin{array}{r} -) 4x + y = 7 \\ \hline -7y = 35 \end{array}$$

$$y = -5$$

$y = -5$ を④に代入すると

$$4x + y = 7$$

$$4x + 1 \times (-5) = 7$$

$$4x - 5 = 7$$

$$4x = 12$$

$$x = 3$$

答え $x = 3, y = -5$

$$\begin{cases} -0.01x + 0.01y = -0.02 & \dots\dots\textcircled{1} \\ 0.3x + 0.2y = 2.6 & \dots\dots\textcircled{2} \end{cases}$$

①の両辺に 100 をかけると

$$\begin{aligned} (-0.01x + 0.01y) \times 100 &= -0.02 \times 100 \\ -x + y &= -2 & \dots\dots\textcircled{3} \end{aligned}$$

②の両辺に 10 をかけると

$$\begin{aligned} (0.3x + 0.2y) \times 10 &= 2.6 \times 10 \\ 3x + 2y &= 26 & \dots\dots\textcircled{4} \end{aligned}$$

$$\textcircled{3} \times 2 \quad -2x + 2y = -4$$

$$\textcircled{4} \quad \begin{array}{r} -) 3x + 2y = 26 \\ \hline -5x \quad = -30 \end{array}$$

$$x = 6$$

$x = 6$ を③に代入すると

$$-x + y = -2$$

$$-1 \times 6 + y = -2$$

$$-6 + y = -2$$

$$y = 4$$

答え $x = 6, y = 4$

$$\begin{cases} 0.1x + 0.2y = 1.5 \\ 0.3x + 0.2y = -0.3 \end{cases}$$

$$\begin{cases} -0.3x + 0.2y = 3.8 \\ -0.01x + 0.01y = 0.12 \end{cases}$$

$$\begin{cases} 0.1x + 0.2y = 1.5 & \dots\dots\textcircled{1} \\ 0.3x + 0.2y = -0.3 & \dots\dots\textcircled{2} \end{cases}$$

①の両辺に 10 をかけると
 $(0.1x + 0.2y) \times 10 = 1.5 \times 10$
 $x + 2y = 15 \quad \dots\dots\textcircled{3}$

②の両辺に 10 をかけると
 $(0.3x + 0.2y) \times 10 = -0.3 \times 10$
 $3x + 2y = -3 \quad \dots\dots\textcircled{4}$

$$\begin{array}{r} \textcircled{3} \quad x + 2y = 15 \\ \textcircled{4} \quad -) \quad 3x + 2y = -3 \\ \hline \quad -2x \quad = 18 \\ \quad \quad \quad x = -9 \end{array}$$

$x = -9$ を③に代入すると
 $x + 2y = 15$
 $1 \times (-9) + 2y = 15$
 $-9 + 2y = 15$
 $2y = 24$
 $y = 12$

答え $x = -9, y = 12$

$$\begin{cases} -0.3x + 0.2y = 3.8 & \dots\dots\textcircled{1} \\ -0.01x + 0.01y = 0.12 & \dots\dots\textcircled{2} \end{cases}$$

①の両辺に 10 をかけると
 $(-0.3x + 0.2y) \times 10 = 3.8 \times 10$
 $-3x + 2y = 38 \quad \dots\dots\textcircled{3}$

②の両辺に 100 をかけると
 $(-0.01x + 0.01y) \times 100 = 0.12 \times 100$
 $-x + y = 12 \quad \dots\dots\textcircled{4}$

$$\begin{array}{r} \textcircled{3} \quad -3x + 2y = 38 \\ \textcircled{4} \times 2 \quad -) \quad -2x + 2y = 24 \\ \hline \quad -x \quad = 14 \\ \quad \quad \quad x = -14 \end{array}$$

$x = -14$ を④に代入すると
 $-x + y = 12$
 $-1 \times (-14) + y = 12$
 $14 + y = 12$
 $y = -2$

答え $x = -14, y = -2$

$$\begin{cases} -0.04x - 0.03y = 0.17 \\ 0.1x + 0.1y = -0.6 \end{cases}$$

$$\begin{cases} 0.02x + 0.03y = -0.11 \\ 0.01x + 0.01y = -0.06 \end{cases}$$

$$\begin{cases} -0.04x - 0.03y = 0.17 & \dots\dots ① \\ 0.1x + 0.1y = -0.6 & \dots\dots ② \end{cases}$$

①の両辺に 100 をかけると

$$\begin{aligned} (-0.04x - 0.03y) \times 100 &= 0.17 \times 100 \\ -4x - 3y &= 17 & \dots\dots ③ \end{aligned}$$

②の両辺に 10 をかけると

$$\begin{aligned} (0.1x + 0.1y) \times 10 &= -0.6 \times 10 \\ x + y &= -6 & \dots\dots ④ \end{aligned}$$

$$\textcircled{3} \quad -4x - 3y = 17$$

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

$$x = 1$$

$x = 1$ を④に代入すると

$$x + y = -6$$

$$1 \times 1 + y = -6$$

$$1 + y = -6$$

$$y = -7$$

答え $x = 1, y = -7$

$$\begin{cases} 0.02x + 0.03y = -0.11 & \dots\dots ① \\ 0.01x + 0.01y = -0.06 & \dots\dots ② \end{cases}$$

①の両辺に 100 をかけると

$$\begin{aligned} (0.02x + 0.03y) \times 100 &= -0.11 \times 100 \\ 2x + 3y &= -11 & \dots\dots ③ \end{aligned}$$

②の両辺に 100 をかけると

$$\begin{aligned} (0.01x + 0.01y) \times 100 &= -0.06 \times 100 \\ x + y &= -6 & \dots\dots ④ \end{aligned}$$

$$\textcircled{3} \quad 2x + 3y = -11$$

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

$$y = 1$$

$y = 1$ を④に代入すると

$$x + y = -6$$

$$x + 1 \times 1 = -6$$

$$x + 1 = -6$$

$$x = -7$$

答え $x = -7, y = 1$

$$\begin{cases} 0.1x + 0.1y = 0 \\ 0.03x + 0.04y = 0.13 \end{cases}$$

$$\begin{cases} 0.3x + 0.5y = 0.3 \\ 0.01x - 0.01y = -0.07 \end{cases}$$

$$\begin{cases} 0.1x + 0.1y = 0 & \dots\dots\textcircled{1} \\ 0.03x + 0.04y = 0.13 & \dots\dots\textcircled{2} \end{cases}$$

①の両辺に 10 をかけると

$$(0.1x + 0.1y) \times 10 = 0 \times 10$$

$$x + y = 0 \quad \dots\dots\textcircled{3}$$

②の両辺に 100 をかけると

$$(0.03x + 0.04y) \times 100 = 0.13 \times 100$$

$$3x + 4y = 13 \quad \dots\dots\textcircled{4}$$

$$\textcircled{3} \times 3 \quad 3x + 3y = 0$$

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

$$y = 13$$

$y = 13$ を③に代入すると

$$x + y = 0$$

$$x + 1 \times 13 = 0$$

$$x + 13 = 0$$

$$x = -13$$

答え $x = -13, y = 13$

$$\begin{cases} 0.3x + 0.5y = 0.3 & \dots\dots\textcircled{1} \\ 0.01x - 0.01y = -0.07 & \dots\dots\textcircled{2} \end{cases}$$

①の両辺に 10 をかけると

$$(0.3x + 0.5y) \times 10 = 0.3 \times 10$$

$$3x + 5y = 3 \quad \dots\dots\textcircled{3}$$

②の両辺に 100 をかけると

$$(0.01x - 0.01y) \times 100 = -0.07 \times 100$$

$$x - y = -7 \quad \dots\dots\textcircled{4}$$

$$\textcircled{3} \quad 3x + 5y = 3$$

$$\textcircled{4} \times 3 \quad \begin{array}{r} -) 3x - 3y = -21 \\ \hline 8y = 24 \end{array}$$

$$y = 3$$

$y = 3$ を④に代入すると

$$x - y = -7$$

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

$$x - 3 = -7$$

$$x = -4$$

答え $x = -4, y = 3$

$$\begin{cases} -0.01x - 0.07y = 0.06 \\ -0.01x - 0.02y = -0.04 \end{cases}$$

$$\begin{cases} 0.3x + 0.1y = -0.6 \\ 0.1x + 0.1y = -0.8 \end{cases}$$

$$\begin{cases} -0.01x - 0.07y = 0.06 & \dots\dots ① \\ -0.01x - 0.02y = -0.04 & \dots\dots ② \end{cases}$$

$$\begin{cases} 0.3x + 0.1y = -0.6 & \dots\dots ① \\ 0.1x + 0.1y = -0.8 & \dots\dots ② \end{cases}$$

①の両辺に 100 をかけると

$$\begin{aligned} (-0.01x - 0.07y) \times 100 &= 0.06 \times 100 \\ -x - 7y &= 6 \quad \dots\dots ③ \end{aligned}$$

②の両辺に 100 をかけると

$$\begin{aligned} (-0.01x - 0.02y) \times 100 &= -0.04 \times 100 \\ -x - 2y &= -4 \quad \dots\dots ④ \end{aligned}$$

$$③ \quad -x - 7y = 6$$

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

$$y = -2$$

$y = -2$ を④に代入すると

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

答え $x = 8, y = -2$

①の両辺に 10 をかけると

$$\begin{aligned} (0.3x + 0.1y) \times 10 &= -0.6 \times 10 \\ 3x + y &= -6 \quad \dots\dots ③ \end{aligned}$$

②の両辺に 10 をかけると

$$\begin{aligned} (0.1x + 0.1y) \times 10 &= -0.8 \times 10 \\ x + y &= -8 \quad \dots\dots ④ \end{aligned}$$

$$③ \quad 3x + y = -6$$

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

$$x = 1$$

$x = 1$ を③に代入すると

$$\begin{aligned} 3x + y &= -6 \\ 3 \times 1 + y &= -6 \\ 3 + y &= -6 \\ y &= -9 \end{aligned}$$

答え $x = 1, y = -9$

$$\begin{cases} -0.3x - 0.2y = 2.3 \\ 0.3x + 0.1y = -1.6 \end{cases}$$

$$\begin{cases} -0.3x - 0.1y = 1.1 \\ -0.02x + 0.01y = -0.01 \end{cases}$$

$$\begin{cases} -0.3x - 0.2y = 2.3 & \dots\dots\textcircled{1} \\ 0.3x + 0.1y = -1.6 & \dots\dots\textcircled{2} \end{cases}$$

①の両辺に10をかけると
 $(-0.3x - 0.2y) \times 10 = 2.3 \times 10$
 $-3x - 2y = 23 \quad \dots\dots\textcircled{3}$

②の両辺に10をかけると
 $(0.3x + 0.1y) \times 10 = -1.6 \times 10$
 $3x + y = -16 \quad \dots\dots\textcircled{4}$

③ $-3x - 2y = 23$

④ $\begin{array}{r} +) 3x + y = -16 \\ \hline -y = 7 \end{array}$

$y = -7$

$y = -7$ を④に代入すると

$3x + y = -16$

$3x + 1 \times (-7) = -16$

$3x - 7 = -16$

$3x = -9$

$x = -3$

答え $x = -3, y = -7$

$$\begin{cases} -0.3x - 0.1y = 1.1 & \dots\dots\textcircled{1} \\ -0.02x + 0.01y = -0.01 & \dots\dots\textcircled{2} \end{cases}$$

①の両辺に10をかけると
 $(-0.3x - 0.1y) \times 10 = 1.1 \times 10$
 $-3x - y = 11 \quad \dots\dots\textcircled{3}$

②の両辺に100をかけると
 $(-0.02x + 0.01y) \times 100 = -0.01 \times 100$
 $-2x + y = -1 \quad \dots\dots\textcircled{4}$

③ $-3x - y = 11$

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

$x = -2$

$x = -2$ を④に代入すると

$-2x + y = -1$

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

$4 + y = -1$

$y = -5$

答え $x = -2, y = -5$

$$\begin{cases} -0.02x + 0.01y = 0.03 \\ 0.3x + 0.1y = 1.3 \end{cases}$$

$$\begin{cases} -0.1x + 0.2y = -0.2 \\ 0.01x - 0.06y = -0.22 \end{cases}$$

$$\begin{cases} -0.02x + 0.01y = 0.03 & \dots\dots ① \\ 0.3x + 0.1y = 1.3 & \dots\dots ② \end{cases}$$

①の両辺に 100 をかけると

$$\begin{aligned} (-0.02x + 0.01y) \times 100 &= 0.03 \times 100 \\ -2x + y &= 3 & \dots\dots ③ \end{aligned}$$

②の両辺に 10 をかけると

$$\begin{aligned} (0.3x + 0.1y) \times 10 &= 1.3 \times 10 \\ 3x + y &= 13 & \dots\dots ④ \end{aligned}$$

$$③ \quad -2x + y = 3$$

$$④ \quad \begin{array}{r} -) \quad 3x + y = 13 \\ \underline{-5x} \quad \quad = -10 \end{array}$$

$$x = 2$$

$x = 2$ を ③ に代入すると

$$-2x + y = 3$$

$$-2 \times 2 + y = 3$$

$$-4 + y = 3$$

$$y = 7$$

答え $x = 2, y = 7$

$$\begin{cases} -0.1x + 0.2y = -0.2 & \dots\dots ① \\ 0.01x - 0.06y = -0.22 & \dots\dots ② \end{cases}$$

①の両辺に 10 をかけると

$$\begin{aligned} (-0.1x + 0.2y) \times 10 &= -0.2 \times 10 \\ -x + 2y &= -2 & \dots\dots ③ \end{aligned}$$

②の両辺に 100 をかけると

$$\begin{aligned} (0.01x - 0.06y) \times 100 &= -0.22 \times 100 \\ x - 6y &= -22 & \dots\dots ④ \end{aligned}$$

$$③ \quad -x + 2y = -2$$

$$④ \quad \begin{array}{r} +) \quad x - 6y = -22 \\ \underline{-4y} \quad \quad = -24 \end{array}$$

$$y = 6$$

$y = 6$ を ③ に代入すると

$$-x + 2y = -2$$

$$-x + 2 \times 6 = -2$$

$$-x + 12 = -2$$

$$-x = -14$$

$$x = 14$$

答え $x = 14, y = 6$

$$\begin{cases} -0.1x + 0.1y = -1.1 \\ 0.1x + 0.2y = -3.1 \end{cases}$$

$$\begin{cases} -0.7x + 0.6y = 0.2 \\ -0.01x + 0.04y = -0.06 \end{cases}$$

$$\begin{cases} -0.1x + 0.1y = -1.1 & \dots\dots\textcircled{1} \\ 0.1x + 0.2y = -3.1 & \dots\dots\textcircled{2} \end{cases}$$

①の両辺に 10 をかけると

$$\begin{aligned} (-0.1x + 0.1y) \times 10 &= -1.1 \times 10 \\ -x + y &= -11 & \dots\dots\textcircled{3} \end{aligned}$$

②の両辺に 10 をかけると

$$\begin{aligned} (0.1x + 0.2y) \times 10 &= -3.1 \times 10 \\ x + 2y &= -31 & \dots\dots\textcircled{4} \end{aligned}$$

$$\textcircled{3} \quad -x + y = -11$$

$$\textcircled{4} \quad \begin{array}{r} +) \quad x + 2y = -31 \\ \hline 3y = -42 \end{array}$$

$$y = -14$$

$y = -14$ を③に代入すると

$$-x + y = -11$$

$$-x + 1 \times (-14) = -11$$

$$-x - 14 = -11$$

$$-x = 3$$

$$x = -3$$

答え $x = -3, y = -14$

$$\begin{cases} -0.7x + 0.6y = 0.2 & \dots\dots\textcircled{1} \\ -0.01x + 0.04y = -0.06 & \dots\dots\textcircled{2} \end{cases}$$

①の両辺に 10 をかけると

$$\begin{aligned} (-0.7x + 0.6y) \times 10 &= 0.2 \times 10 \\ -7x + 6y &= 2 & \dots\dots\textcircled{3} \end{aligned}$$

②の両辺に 100 をかけると

$$\begin{aligned} (-0.01x + 0.04y) \times 100 &= -0.06 \times 100 \\ -x + 4y &= -6 & \dots\dots\textcircled{4} \end{aligned}$$

$$\textcircled{3} \times 2 \quad -14x + 12y = 4$$

$$\textcircled{4} \times 3 \quad \begin{array}{r} -) \quad -3x + 12y = -18 \\ \hline -11x \quad \quad = 22 \end{array}$$

$$x = -2$$

$x = -2$ を④に代入すると

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

$$-1 \times (-2) + 4y = -6$$

$$2 + 4y = -6$$

$$4y = -8$$

$$y = -2$$

答え $x = -2, y = -2$

$$\begin{cases} 0.4x - 0.1y = -0.9 \\ 0.01x - 0.01y = -0.03 \end{cases}$$

$$\begin{cases} -0.03x + 0.05y = 0.29 \\ 0.1x - 0.1y = -0.9 \end{cases}$$

$$\begin{cases} 0.4x - 0.1y = -0.9 & \dots\dots ① \\ 0.01x - 0.01y = -0.03 & \dots\dots ② \end{cases}$$

①の両辺に 10 をかけると

$$\begin{aligned} (0.4x - 0.1y) \times 10 &= -0.9 \times 10 \\ 4x - y &= -9 \quad \dots\dots ③ \end{aligned}$$

②の両辺に 100 をかけると

$$\begin{aligned} (0.01x - 0.01y) \times 100 &= -0.03 \times 100 \\ x - y &= -3 \quad \dots\dots ④ \end{aligned}$$

$$③ \quad 4x - y = -9$$

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

$$x = -2$$

$x = -2$ を④に代入すると

$$\begin{aligned} x - y &= -3 \\ 1 \times (-2) - y &= -3 \\ -2 - y &= -3 \\ -y &= -1 \\ y &= 1 \end{aligned}$$

答え $x = -2, y = 1$

$$\begin{cases} -0.03x + 0.05y = 0.29 & \dots\dots ① \\ 0.1x - 0.1y = -0.9 & \dots\dots ② \end{cases}$$

①の両辺に 100 をかけると

$$\begin{aligned} (-0.03x + 0.05y) \times 100 &= 0.29 \times 100 \\ -3x + 5y &= 29 \quad \dots\dots ③ \end{aligned}$$

②の両辺に 10 をかけると

$$\begin{aligned} (0.1x - 0.1y) \times 10 &= -0.9 \times 10 \\ x - y &= -9 \quad \dots\dots ④ \end{aligned}$$

$$③ \quad -3x + 5y = 29$$

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

$$y = 1$$

$y = 1$ を④に代入すると

$$\begin{aligned} x - y &= -9 \\ x - 1 \times 1 &= -9 \\ x - 1 &= -9 \\ x &= -8 \end{aligned}$$

答え $x = -8, y = 1$

問題

小数を含む連立方程式を解いてみましょう。

$$\begin{cases} -0.1x + 0.1y = 0.5 \\ x + 3y = 35 \end{cases}$$

$$\begin{cases} -0.3x + 0.2y = 0.5 \\ 2x - y = 0 \end{cases}$$

$$\begin{cases} -0.1x + 0.1y = 0.5 & \dots\dots\textcircled{1} \\ x + 3y = 35 & \dots\dots\textcircled{2} \end{cases}$$

①の両辺に10をかけると

$$\begin{aligned} (-0.1x + 0.1y) \times 10 &= 0.5 \times 10 \\ -x + y &= 5 & \dots\dots\textcircled{3} \end{aligned}$$

$$\begin{array}{r} \textcircled{3} \quad -x + y = 5 \\ \textcircled{2} \quad +) \quad x + 3y = 35 \\ \hline \quad \quad 4y = 40 \\ \quad \quad y = 10 \end{array}$$

$y = 10$ を③に代入すると

$$\begin{aligned} -x + y &= 5 \\ -x + 1 \times 10 &= 5 \\ -x + 10 &= 5 \\ -x &= -5 \\ x &= 5 \end{aligned}$$

答え $x = 5, y = 10$

$$\begin{cases} -0.3x + 0.2y = 0.5 & \dots\dots\textcircled{1} \\ 2x - y = 0 & \dots\dots\textcircled{2} \end{cases}$$

①の両辺に10をかけると

$$\begin{aligned} (-0.3x + 0.2y) \times 10 &= 0.5 \times 10 \\ -3x + 2y &= 5 & \dots\dots\textcircled{3} \end{aligned}$$

$$\begin{array}{r} \textcircled{3} \quad -3x + 2y = 5 \\ \textcircled{2} \times 2 \quad +) \quad 4x - 2y = 0 \\ \hline \quad \quad x = 5 \end{array}$$

$x = 5$ を②に代入すると

$$\begin{aligned} 2x - y &= 0 \\ 2 \times 5 - y &= 0 \\ 10 - y &= 0 \\ -y &= -10 \\ y &= 10 \end{aligned}$$

答え $x = 5, y = 10$

$$\begin{cases} -0.04x + 0.07y = -0.02 \\ 0.01x - 0.01y = -0.04 \end{cases}$$

$$\begin{cases} -7x + 4y = -38 \\ 0.01x - 0.02y = 0.04 \end{cases}$$

$$\begin{cases} -0.04x + 0.07y = -0.02 & \dots\dots ① \\ 0.01x - 0.01y = -0.04 & \dots\dots ② \end{cases}$$

$$\begin{cases} -7x + 4y = -38 & \dots\dots ① \\ 0.01x - 0.02y = 0.04 & \dots\dots ② \end{cases}$$

①の両辺に 100 をかけると

$$\begin{aligned} (-0.04x + 0.07y) \times 100 &= -0.02 \times 100 \\ -4x + 7y &= -2 \quad \dots\dots ③ \end{aligned}$$

②の両辺に 100 をかけると

$$\begin{aligned} (0.01x - 0.01y) \times 100 &= -0.04 \times 100 \\ x - y &= -4 \quad \dots\dots ④ \end{aligned}$$

$$③ \quad -4x + 7y = -2$$

$$④ \times 4 \quad +) \quad \frac{4x - 4y = -16}{3y = -18}$$

$$y = -6$$

$y = -6$ を ④ に代入すると

$$x - y = -4$$

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

$$x + 6 = -4$$

$$x = -10$$

答え $x = -10, y = -6$

②の両辺に 100 をかけると

$$\begin{aligned} (0.01x - 0.02y) \times 100 &= 0.04 \times 100 \\ x - 2y &= 4 \quad \dots\dots ③ \end{aligned}$$

$$① \quad -7x + 4y = -38$$

$$③ \times 2 \quad +) \quad \frac{2x - 4y = 8}{-5x = -30}$$

$$x = 6$$

$x = 6$ を ③ に代入すると

$$x - 2y = 4$$

$$1 \times 6 - 2y = 4$$

$$6 - 2y = 4$$

$$-2y = -2$$

$$y = 1$$

答え $x = 6, y = 1$

$$\begin{cases} 0.01x - 0.01y = -0.11 \\ 0.1x + 0.1y = 0.5 \end{cases}$$

$$\begin{cases} -0.1x - 0.1y = 0.6 \\ x - y = -12 \end{cases}$$

$$\begin{cases} 0.01x - 0.01y = -0.11 & \dots\dots ① \\ 0.1x + 0.1y = 0.5 & \dots\dots ② \end{cases}$$

①の両辺に 100 をかけると

$$(0.01x - 0.01y) \times 100 = -0.11 \times 100$$

$$x - y = -11 \quad \dots\dots ③$$

②の両辺に 10 をかけると

$$(0.1x + 0.1y) \times 10 = 0.5 \times 10$$

$$x + y = 5 \quad \dots\dots ④$$

$$③ \quad x - y = -11$$

$$④ \quad \begin{array}{r} -) x + y = 5 \\ \hline -2y = -16 \end{array}$$

$$y = 8$$

$y = 8$ を④に代入すると

$$x + y = 5$$

$$x + 1 \times 8 = 5$$

$$x + 8 = 5$$

$$x = -3$$

答え $x = -3, y = 8$

$$\begin{cases} -0.1x - 0.1y = 0.6 & \dots\dots ① \\ x - y = -12 & \dots\dots ② \end{cases}$$

①の両辺に 10 をかけると

$$(-0.1x - 0.1y) \times 10 = 0.6 \times 10$$

$$-x - y = 6 \quad \dots\dots ③$$

$$③ \quad -x - y = 6$$

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

$$y = 3$$

$y = 3$ を③に代入すると

$$-x - y = 6$$

$$-x - 1 \times 3 = 6$$

$$-x - 3 = 6$$

$$-x = 9$$

$$x = -9$$

答え $x = -9, y = 3$

$$\begin{cases} -0.01x + 0.01y = -0.05 \\ 0.01x + 0.01y = -0.21 \end{cases}$$

$$\begin{cases} -0.02x + 0.01y = -0.26 \\ x + y = 7 \end{cases}$$

$$\begin{cases} -0.01x + 0.01y = -0.05 & \dots\dots ① \\ 0.01x + 0.01y = -0.21 & \dots\dots ② \end{cases}$$

①の両辺に 100 をかけると

$$\begin{aligned} (-0.01x + 0.01y) \times 100 &= -0.05 \times 100 \\ -x + y &= -5 & \dots\dots ③ \end{aligned}$$

②の両辺に 100 をかけると

$$\begin{aligned} (0.01x + 0.01y) \times 100 &= -0.21 \times 100 \\ x + y &= -21 & \dots\dots ④ \end{aligned}$$

$$③ \quad -x + y = -5$$

$$④ \quad \begin{array}{r} +) \quad x + y = -21 \\ \hline 2y = -26 \end{array}$$

$$y = -13$$

$y = -13$ を ③ に代入すると

$$-x + y = -5$$

$$-x + 1 \times (-13) = -5$$

$$-x - 13 = -5$$

$$-x = 8$$

$$x = -8$$

答え $x = -8, y = -13$

$$\begin{cases} -0.02x + 0.01y = -0.26 & \dots\dots ① \\ x + y = 7 & \dots\dots ② \end{cases}$$

①の両辺に 100 をかけると

$$\begin{aligned} (-0.02x + 0.01y) \times 100 &= -0.26 \times 100 \\ -2x + y &= -26 & \dots\dots ③ \end{aligned}$$

$$③ \quad -2x + y = -26$$

$$② \quad \begin{array}{r} -) \quad x + y = 7 \\ \hline -3x \quad = -33 \end{array}$$

$$x = 11$$

$x = 11$ を ② に代入すると

$$x + y = 7$$

$$1 \times 11 + y = 7$$

$$11 + y = 7$$

$$y = -4$$

答え $x = 11, y = -4$

$$\begin{cases} 0.01x + 0.01y = -0.01 \\ 4x + y = 29 \end{cases}$$

$$\begin{cases} 6x - 7y = 45 \\ 0.2x - 0.1y = 0.3 \end{cases}$$

$$\begin{cases} 0.01x + 0.01y = -0.01 & \dots\dots ① \\ 4x + y = 29 & \dots\dots ② \end{cases}$$

①の両辺に 100 をかけると

$$(0.01x + 0.01y) \times 100 = -0.01 \times 100$$

$$x + y = -1 \quad \dots\dots ③$$

$$\begin{array}{r} ③ \quad x + y = -1 \\ ② \quad -) 4x + y = 29 \\ \hline -3x \quad = -30 \\ \\ x = 10 \end{array}$$

$x = 10$ を ③ に代入すると

$$\begin{aligned} x + y &= -1 \\ 1 \times 10 + y &= -1 \\ 10 + y &= -1 \\ y &= -11 \end{aligned}$$

答え $x = 10, y = -11$

$$\begin{cases} 6x - 7y = 45 & \dots\dots ① \\ 0.2x - 0.1y = 0.3 & \dots\dots ② \end{cases}$$

②の両辺に 10 をかけると

$$(0.2x - 0.1y) \times 10 = 0.3 \times 10$$

$$2x - y = 3 \quad \dots\dots ③$$

$$\begin{array}{r} ① \quad 6x - 7y = 45 \\ ③ \times 3 \quad -) 6x - 3y = 9 \\ \hline -4y = 36 \\ \\ y = -9 \end{array}$$

$y = -9$ を ③ に代入すると

$$\begin{aligned} 2x - y &= 3 \\ 2x - 1 \times (-9) &= 3 \\ 2x + 9 &= 3 \\ 2x &= -6 \\ x &= -3 \end{aligned}$$

答え $x = -3, y = -9$

$$\begin{cases} -0.3x - 0.2y = 1.5 \\ -0.01x + 0.01y = -0.1 \end{cases}$$

$$\begin{cases} -0.01x - 0.02y = 0.06 \\ 3x + 2y = -10 \end{cases}$$

$$\begin{cases} -0.3x - 0.2y = 1.5 & \dots\dots\textcircled{1} \\ -0.01x + 0.01y = -0.1 & \dots\dots\textcircled{2} \end{cases}$$

①の両辺に 10 をかけると

$$\begin{aligned} (-0.3x - 0.2y) \times 10 &= 1.5 \times 10 \\ -3x - 2y &= 15 \quad \dots\dots\textcircled{3} \end{aligned}$$

②の両辺に 100 をかけると

$$\begin{aligned} (-0.01x + 0.01y) \times 100 &= -0.1 \times 100 \\ -x + y &= -10 \quad \dots\dots\textcircled{4} \end{aligned}$$

$$\textcircled{3} \quad -3x - 2y = 15$$

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

$$x = 1$$

$x = 1$ を④に代入すると

$$-x + y = -10$$

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

$$-1 + y = -10$$

$$y = -9$$

答え $x = 1, y = -9$

$$\begin{cases} -0.01x - 0.02y = 0.06 & \dots\dots\textcircled{1} \\ 3x + 2y = -10 & \dots\dots\textcircled{2} \end{cases}$$

①の両辺に 100 をかけると

$$\begin{aligned} (-0.01x - 0.02y) \times 100 &= 0.06 \times 100 \\ -x - 2y &= 6 \quad \dots\dots\textcircled{3} \end{aligned}$$

$$\textcircled{3} \quad -x - 2y = 6$$

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

$$x = -2$$

$x = -2$ を③に代入すると

$$-x - 2y = 6$$

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

$$2 - 2y = 6$$

$$-2y = 4$$

$$y = -2$$

答え $x = -2, y = -2$

$$\begin{cases} -0.07x + 0.05y = -0.13 \\ 0.1x - 0.2y = 0.7 \end{cases}$$

$$\begin{cases} -0.04x + 0.01y = -0.34 \\ 0.02x - 0.01y = 0.18 \end{cases}$$

$$\begin{cases} -0.07x + 0.05y = -0.13 & \dots\dots ① \\ 0.1x - 0.2y = 0.7 & \dots\dots ② \end{cases}$$

$$\begin{cases} -0.04x + 0.01y = -0.34 & \dots\dots ① \\ 0.02x - 0.01y = 0.18 & \dots\dots ② \end{cases}$$

①の両辺に 100 をかけると

$$\begin{aligned} (-0.07x + 0.05y) \times 100 &= -0.13 \times 100 \\ -7x + 5y &= -13 & \dots\dots ③ \end{aligned}$$

②の両辺に 10 をかけると

$$\begin{aligned} (0.1x - 0.2y) \times 10 &= 0.7 \times 10 \\ x - 2y &= 7 & \dots\dots ④ \end{aligned}$$

$$③ \times 2 \quad -14x + 10y = -26$$

$$④ \times 5 \quad +) \quad \begin{array}{r} 5x - 10y = 35 \\ \hline -9x \quad \quad = 9 \end{array}$$

$$x = -1$$

$x = -1$ を④に代入すると

$$x - 2y = 7$$

$$1 \times (-1) - 2y = 7$$

$$-1 - 2y = 7$$

$$-2y = 8$$

$$y = -4$$

答え $x = -1, y = -4$

①の両辺に 100 をかけると

$$\begin{aligned} (-0.04x + 0.01y) \times 100 &= -0.34 \times 100 \\ -4x + y &= -34 & \dots\dots ③ \end{aligned}$$

②の両辺に 100 をかけると

$$\begin{aligned} (0.02x - 0.01y) \times 100 &= 0.18 \times 100 \\ 2x - y &= 18 & \dots\dots ④ \end{aligned}$$

$$③ \quad -4x + y = -34$$

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

$$x = 8$$

$x = 8$ を④に代入すると

$$2x - y = 18$$

$$2 \times 8 - y = 18$$

$$16 - y = 18$$

$$-y = 2$$

$$y = -2$$

答え $x = 8, y = -2$

$$\begin{cases} -0.1x + 0.3y = 0.4 \\ 0.1x + 0.1y = -0.8 \end{cases}$$

$$\begin{cases} -0.1x + 0.1y = -0.7 \\ 0.02x + 0.01y = 0.05 \end{cases}$$

$$\begin{cases} -0.1x + 0.3y = 0.4 & \dots\dots ① \\ 0.1x + 0.1y = -0.8 & \dots\dots ② \end{cases}$$

①の両辺に10をかけると

$$\begin{aligned} (-0.1x + 0.3y) \times 10 &= 0.4 \times 10 \\ -x + 3y &= 4 & \dots\dots ③ \end{aligned}$$

②の両辺に10をかけると

$$\begin{aligned} (0.1x + 0.1y) \times 10 &= -0.8 \times 10 \\ x + y &= -8 & \dots\dots ④ \end{aligned}$$

$$③ \quad -x + 3y = 4$$

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

$$y = -1$$

$y = -1$ を③に代入すると

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

答え $x = -7, y = -1$

$$\begin{cases} -0.1x + 0.1y = -0.7 & \dots\dots ① \\ 0.02x + 0.01y = 0.05 & \dots\dots ② \end{cases}$$

①の両辺に10をかけると

$$\begin{aligned} (-0.1x + 0.1y) \times 10 &= -0.7 \times 10 \\ -x + y &= -7 & \dots\dots ③ \end{aligned}$$

②の両辺に100をかけると

$$\begin{aligned} (0.02x + 0.01y) \times 100 &= 0.05 \times 100 \\ 2x + y &= 5 & \dots\dots ④ \end{aligned}$$

$$③ \quad -x + y = -7$$

$$④ \quad \begin{array}{r} -) \quad 2x + y = 5 \\ \hline \quad -3x = -12 \end{array}$$

$$x = 4$$

$x = 4$ を③に代入すると

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

答え $x = 4, y = -3$

$$\begin{cases} 0.3x + 0.7y = -3.3 \\ 0.01x - 0.01y = -0.01 \end{cases}$$

$$\begin{cases} -x - y = 14 \\ 0.03x + 0.02y = -0.32 \end{cases}$$

$$\begin{cases} 0.3x + 0.7y = -3.3 & \dots\dots ① \\ 0.01x - 0.01y = -0.01 & \dots\dots ② \end{cases}$$

①の両辺に 10 をかけると

$$(0.3x + 0.7y) \times 10 = -3.3 \times 10$$

$$3x + 7y = -33 \quad \dots\dots ③$$

②の両辺に 100 をかけると

$$(0.01x - 0.01y) \times 100 = -0.01 \times 100$$

$$x - y = -1 \quad \dots\dots ④$$

$$③ \quad 3x + 7y = -33$$

$$④ \times 3 \quad \begin{array}{r} -) 3x - 3y = -3 \\ \hline 10y = -30 \end{array}$$

$$y = -3$$

$y = -3$ を ④ に代入すると

$$x - y = -1$$

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

$$x + 3 = -1$$

$$x = -4$$

答え $x = -4, y = -3$

$$\begin{cases} -x - y = 14 & \dots\dots ① \\ 0.03x + 0.02y = -0.32 & \dots\dots ② \end{cases}$$

②の両辺に 100 をかけると

$$(0.03x + 0.02y) \times 100 = -0.32 \times 100$$

$$3x + 2y = -32 \quad \dots\dots ③$$

$$① \times 2 \quad -2x - 2y = 28$$

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

$$x = -4$$

$x = -4$ を ① に代入すると

$$-x - y = 14$$

$$-1 \times (-4) - y = 14$$

$$4 - y = 14$$

$$-y = 10$$

$$y = -10$$

答え $x = -4, y = -10$

$$\begin{cases} -0.01x - 0.01y = 0.09 \\ -0.05x - 0.01y = 0.29 \end{cases}$$

$$\begin{cases} -0.1x - 0.1y = 0 \\ 5x + 6y = 3 \end{cases}$$

$$\begin{cases} -0.01x - 0.01y = 0.09 & \dots\dots ① \\ -0.05x - 0.01y = 0.29 & \dots\dots ② \end{cases}$$

①の両辺に 100 をかけると

$$\begin{aligned} (-0.01x - 0.01y) \times 100 &= 0.09 \times 100 \\ -x - y &= 9 & \dots\dots ③ \end{aligned}$$

②の両辺に 100 をかけると

$$\begin{aligned} (-0.05x - 0.01y) \times 100 &= 0.29 \times 100 \\ -5x - y &= 29 & \dots\dots ④ \end{aligned}$$

$$③ \quad -x - y = 9$$

$$④ \quad \begin{array}{r} -) -5x - y = 29 \\ \underline{4x} -20 \end{array}$$

$$x = -5$$

$x = -5$ を ③ に代入すると

$$-x - y = 9$$

$$-1 \times (-5) - y = 9$$

$$5 - y = 9$$

$$-y = 4$$

$$y = -4$$

答え $x = -5, y = -4$

$$\begin{cases} -0.1x - 0.1y = 0 & \dots\dots ① \\ 5x + 6y = 3 & \dots\dots ② \end{cases}$$

①の両辺に 10 をかけると

$$\begin{aligned} (-0.1x - 0.1y) \times 10 &= 0 \times 10 \\ -x - y &= 0 & \dots\dots ③ \end{aligned}$$

$$③ \times 5 \quad -5x - 5y = 0$$

$$② \quad \begin{array}{r} +) 5x + 6y = 3 \\ \hline y = 3 \end{array}$$

$$y = 3$$

$y = 3$ を ③ に代入すると

$$-x - y = 0$$

$$-x - 1 \times 3 = 0$$

$$-x - 3 = 0$$

$$-x = 3$$

$$x = -3$$

答え $x = -3, y = 3$

$$\begin{cases} 0.01x + 0.02y = 0.03 \\ 0.01x + 0.01y = 0.07 \end{cases}$$

$$\begin{cases} -0.1x - 0.1y = -0.8 \\ 0.3x - 0.1y = 1.6 \end{cases}$$

$$\begin{cases} 0.01x + 0.02y = 0.03 & \dots\dots ① \\ 0.01x + 0.01y = 0.07 & \dots\dots ② \end{cases}$$

①の両辺に 100 をかけると

$$(0.01x + 0.02y) \times 100 = 0.03 \times 100 \\ x + 2y = 3 \quad \dots\dots ③$$

②の両辺に 100 をかけると

$$(0.01x + 0.01y) \times 100 = 0.07 \times 100 \\ x + y = 7 \quad \dots\dots ④$$

$$③ \quad x + 2y = 3$$

$$④ \quad \begin{array}{r} -) x + y = 7 \\ \hline y = -4 \end{array}$$

$$y = -4$$

$y = -4$ を ③ に代入すると

$$x + 2y = 3$$

$$x + 2 \times (-4) = 3$$

$$x - 8 = 3$$

$$x = 11$$

答え $x = 11, y = -4$

$$\begin{cases} -0.1x - 0.1y = -0.8 & \dots\dots ① \\ 0.3x - 0.1y = 1.6 & \dots\dots ② \end{cases}$$

①の両辺に 10 をかけると

$$(-0.1x - 0.1y) \times 10 = -0.8 \times 10 \\ -x - y = -8 \quad \dots\dots ③$$

②の両辺に 10 をかけると

$$(0.3x - 0.1y) \times 10 = 1.6 \times 10 \\ 3x - y = 16 \quad \dots\dots ④$$

$$③ \quad -x - y = -8$$

$$④ \quad \begin{array}{r} -) 3x - y = 16 \\ \hline -4x \quad = -24 \end{array}$$

$$x = 6$$

$x = 6$ を ③ に代入すると

$$-x - y = -8$$

$$-1 \times 6 - y = -8$$

$$-6 - y = -8$$

$$-y = -2$$

$$y = 2$$

答え $x = 6, y = 2$

$$\begin{cases} -0.3x + 0.2y = 0.3 \\ -3x + 8y = 21 \end{cases}$$

$$\begin{cases} -3x + 2y = -13 \\ 0.2x - 0.1y = 0.5 \end{cases}$$

$$\begin{cases} -0.3x + 0.2y = 0.3 & \dots\dots\textcircled{1} \\ -3x + 8y = 21 & \dots\dots\textcircled{2} \end{cases}$$

①の両辺に 10 をかけると

$$\begin{aligned} (-0.3x + 0.2y) \times 10 &= 0.3 \times 10 \\ -3x + 2y &= 3 & \dots\dots\textcircled{3} \end{aligned}$$

$$\textcircled{3} \quad -3x + 2y = 3$$

$$\textcircled{2} \quad \begin{array}{r} -) -3x + 8y = 21 \\ \hline -6y = -18 \end{array}$$

$$y = 3$$

$y = 3$ を③に代入すると

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

答え $x = 1, y = 3$

$$\begin{cases} -3x + 2y = -13 & \dots\dots\textcircled{1} \\ 0.2x - 0.1y = 0.5 & \dots\dots\textcircled{2} \end{cases}$$

②の両辺に 10 をかけると

$$\begin{aligned} (0.2x - 0.1y) \times 10 &= 0.5 \times 10 \\ 2x - y &= 5 & \dots\dots\textcircled{3} \end{aligned}$$

$$\textcircled{1} \quad -3x + 2y = -13$$

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

$$x = -3$$

$x = -3$ を③に代入すると

$$\begin{aligned} 2x - y &= 5 \\ 2 \times (-3) - y &= 5 \\ -6 - y &= 5 \\ -y &= 11 \\ y &= -11 \end{aligned}$$

答え $x = -3, y = -11$

$$\begin{cases} -0.01x - 0.02y = 0.01 \\ 0.01x - 0.06y = 0.39 \end{cases}$$

$$\begin{cases} -0.3x - 0.1y = 2.8 \\ -0.1x - 0.1y = 0.8 \end{cases}$$

$$\begin{cases} -0.01x - 0.02y = 0.01 & \dots\dots ① \\ 0.01x - 0.06y = 0.39 & \dots\dots ② \end{cases}$$

①の両辺に 100 をかけると
 $(-0.01x - 0.02y) \times 100 = 0.01 \times 100$
 $-x - 2y = 1 \quad \dots\dots ③$

②の両辺に 100 をかけると
 $(0.01x - 0.06y) \times 100 = 0.39 \times 100$
 $x - 6y = 39 \quad \dots\dots ④$

$$③ \quad -x - 2y = 1$$

$$④ \quad \begin{array}{r} +) \quad x - 6y = 39 \\ \hline -8y = 40 \end{array}$$

$$y = -5$$

$y = -5$ を ③ に代入すると

$$\begin{aligned} -x - 2y &= 1 \\ -x - 2 \times (-5) &= 1 \\ -x + 10 &= 1 \\ -x &= -9 \\ x &= 9 \end{aligned}$$

答え $x = 9, y = -5$

$$\begin{cases} -0.3x - 0.1y = 2.8 & \dots\dots ① \\ -0.1x - 0.1y = 0.8 & \dots\dots ② \end{cases}$$

①の両辺に 10 をかけると
 $(-0.3x - 0.1y) \times 10 = 2.8 \times 10$
 $-3x - y = 28 \quad \dots\dots ③$

②の両辺に 10 をかけると
 $(-0.1x - 0.1y) \times 10 = 0.8 \times 10$
 $-x - y = 8 \quad \dots\dots ④$

$$③ \quad -3x - y = 28$$

$$④ \quad \begin{array}{r} -) \quad -x - y = 8 \\ \hline -2x = 20 \end{array}$$

$$x = -10$$

$x = -10$ を ④ に代入すると

$$\begin{aligned} -x - y &= 8 \\ -1 \times (-10) - y &= 8 \\ 10 - y &= 8 \\ -y &= -2 \\ y &= 2 \end{aligned}$$

答え $x = -10, y = 2$

$$\begin{cases} 0.03x + 0.01y = 0.06 \\ 9x + 2y = 33 \end{cases}$$

$$\begin{cases} -0.4x - 0.1y = -0.2 \\ -0.1x - 0.1y = 0.7 \end{cases}$$

$$\begin{cases} 0.03x + 0.01y = 0.06 & \dots\dots ① \\ 9x + 2y = 33 & \dots\dots ② \end{cases}$$

①の両辺に 100 をかけると

$$(0.03x + 0.01y) \times 100 = 0.06 \times 100$$

$$3x + y = 6 \quad \dots\dots ③$$

$$③ \times 2 \quad 6x + 2y = 12$$

$$② \quad -) \quad 9x + 2y = 33$$

$$\hline -3x \quad = -21$$

$$x = 7$$

$x = 7$ を ③ に代入すると

$$3x + y = 6$$

$$3 \times 7 + y = 6$$

$$21 + y = 6$$

$$y = -15$$

答え $x = 7, y = -15$

$$\begin{cases} -0.4x - 0.1y = -0.2 & \dots\dots ① \\ -0.1x - 0.1y = 0.7 & \dots\dots ② \end{cases}$$

①の両辺に 10 をかけると

$$(-0.4x - 0.1y) \times 10 = -0.2 \times 10$$

$$-4x - y = -2 \quad \dots\dots ③$$

②の両辺に 10 をかけると

$$(-0.1x - 0.1y) \times 10 = 0.7 \times 10$$

$$-x - y = 7 \quad \dots\dots ④$$

$$③ \quad -4x - y = -2$$

$$④ \quad -) \quad -x - y = 7$$

$$\hline -3x \quad = -9$$

$$x = 3$$

$x = 3$ を ④ に代入すると

$$-x - y = 7$$

$$-1 \times 3 - y = 7$$

$$-3 - y = 7$$

$$-y = 10$$

$$y = -10$$

答え $x = 3, y = -10$