

【中2数学 | 連立方程式】

単元別演習

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1、次の連立方程式を解きなさい。

□(1) $5x + 7y = x + 2y = 3$

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

① - ② × 5 より、

$$-3y = -12 \quad \therefore y = 4$$

② に代入

$$x + 8 = 3 \quad \therefore x = -5$$

$$\therefore x = -5, y = 4$$

□(2) $3x - y = -x + y = 1$

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

① + ② より、

$$2x = 2 \quad \therefore x = 1$$

② に代入

$$-1 + y = 1 \quad \therefore y = 2$$

$$\therefore x = 1, y = 2$$

□(3) $4x - 3y = -2x + 5y = 7$

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

① + ② × 2 より、

$$7y = 21 \quad \therefore y = 3$$

① に代入

$$4x - 9 = 7$$

$$4x = 16 \quad \therefore x = 4$$

$$\therefore x = 4, y = 3$$

□(4) $2x + 3y = -4x - y = 5$

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

① × 2 + ② より、

$$5y = 15 \quad \therefore y = 3$$

① に代入

$$2x + 9 = 5$$

$$2x = -4 \quad \therefore x = -2$$

$$\therefore x = -2, y = 3$$

□(5) $3x + 4y = 2x - 1 = 4x + 7y$

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

① より、 $x + 4y = -1 \cdots \textcircled{1}'$

② より、 $-2x - 7y = 1 \cdots \textcircled{2}'$

①' × 2 + ②' より、

$$y = -1$$

①' に代入

$$x - 4 = -1 \quad \therefore x = 3$$

$$\therefore x = 3, y = -1$$

□(6) $-7x + 2y + 4 = x - 4y = y + 9$

$$\begin{cases} -7x + 2y + 4 = x - 4y \cdots \textcircled{1} \\ x - 4y = y + 9 \cdots \textcircled{2} \end{cases}$$

① より、 $-8x + 6y = -4$

$$-4x + 3y = -2 \cdots \textcircled{1}'$$

② より、 $x - 5y = 9 \cdots \textcircled{2}'$

①' + ②' × 4 より、

$$-17y = 34 \quad \therefore y = -2$$

②' に代入

$$x + 10 = 9 \quad \therefore x = -1$$

$$\therefore x = -1, y = -2$$