

1次方程式の解き方⑤

1 解答 (1) $x=4$ (2) $x=-12$ (3) $x=10$ (4) $x=-8$

(1) $\frac{3}{2}x = \frac{1}{4}x + 5$

両辺に4をかけると

$$\frac{3}{2}x \times 4 = \left(\frac{1}{4}x + 5\right) \times 4$$

$$6x = x + 20$$

$$6x - x = 20$$

$$5x = 20$$

$$x = 4$$

(2) $\frac{2}{3}x - 7 = \frac{5}{4}x$

両辺に12をかけると

$$\left(\frac{2}{3}x - 7\right) \times 12 = \frac{5}{4}x \times 12$$

$$8x - 84 = 15x$$

$$8x - 15x = 84$$

$$-7x = 84$$

$$x = -12$$

(3) $\frac{x-2}{3} = \frac{2x+4}{9}$

両辺に9をかけると

$$\frac{x-2}{3} \times 9 = \frac{2x+4}{9} \times 9$$

$$3x - 6 = 2x + 4$$

$$3x - 2x = 4 + 6$$

$$x = 10$$

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

両辺に6をかけると

$$\frac{x+2}{2} \times 6 = \frac{x-1}{3} \times 6$$

$$3x + 6 = 2x - 2$$

$$3x - 2x = -2 - 6$$

$$x = -8$$

2 解答 (1) $x = -6$ (2) $x = 15$ (3) $x = 4$ (4) $x = -7$ (5) $x = -3$

(6) $x = -9$

(1) $\frac{1}{2}x + 1 = \frac{5}{6}x + 3$

両辺に6をかけると

$$\left(\frac{1}{2}x + 1\right) \times 6 = \left(\frac{5}{6}x + 3\right) \times 6$$

$$3x + 6 = 5x + 18$$

$$3x - 5x = 18 - 6$$

$$-2x = 12$$

$$x = -6$$

(2) $\frac{2}{5}x + 5 = \frac{2}{3}x + 1$

両辺に15をかけると

$$\left(\frac{2}{5}x + 5\right) \times 15 = \left(\frac{2}{3}x + 1\right) \times 15$$

$$6x + 75 = 10x + 15$$

$$-4x = -60$$

$$x = 15$$

(3) $\frac{x-2}{2} = \frac{x+3}{7}$

両辺に14をかけると

$$\frac{x-2}{2} \times 14 = \frac{x+3}{7} \times 14$$

$$7x - 14 = 2x + 6$$

$$7x - 2x = 6 + 14$$

$$5x = 20$$

$$x = 4$$

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

両辺に12をかけると

$$\frac{2x-1}{3} \times 12 = \frac{3x+1}{4} \times 12$$

$$8x - 4 = 9x + 3$$

$$8x - 9x = 3 + 4$$

$$-x = 7$$

$$x = -7$$

(5) $\frac{2}{3}x + 1 = \frac{5}{6}x + \frac{3}{2}$

両辺に6をかけると

$$\left(\frac{2}{3}x + 1\right) \times 6 = \left(\frac{5}{6}x + \frac{3}{2}\right) \times 6$$

$$4x + 6 = 5x + 9$$

$$4x - 5x = 9 - 6$$

$$-x = 3$$

$$x = -3$$

(6) $\frac{4}{5}x + \frac{3}{2} = \frac{3}{10}x - 3$

両辺に10をかけると

$$\left(\frac{4}{5}x + \frac{3}{2}\right) \times 10 = \left(\frac{3}{10}x - 3\right) \times 10$$

$$8x + 15 = 3x - 30$$

$$8x - 3x = -30 - 15$$

$$5x = -45$$

$$x = -9$$