

第十五課 一元一次方程式(第十五級)

例題

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

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

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

$$-x = 6 + 2$$

$$-x = 8$$

$$x = -8$$

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

$$2\left(3x - \frac{1}{2}\right) = 2\left(\frac{1}{2}x - 1\right)$$

$$6x - 1 = x - 2$$

$$5x = -2 + 1$$

$$5x = -1$$

$$x = -\frac{1}{5}$$

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

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

$$-6x + 3 = 2 + 12x$$

$$-6x - 12x = 2 - 3$$

$$-18x = -1$$

$$x = \frac{-1}{-18}$$

$$x = \frac{1}{18}$$

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

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

$$-3x+12=2x-12$$

$$-3x-2x=-12-12$$

$$-5x=-24$$

$$x=\frac{-24}{-5}$$

$$x=\frac{24}{5}$$

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

$$3\left(\frac{1}{3}x - 2\right) = 3\left(\frac{2}{3}x - 1\right)$$

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

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

$$-x=-3$$

$$x=3$$

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

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

$$10x-1=5x+30$$

$$10x-5x=30+1$$

$$5x=31$$

$$x=\frac{31}{5}$$

$$(7) \quad -x + 3 = \frac{x}{2} - \frac{1}{3}$$

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

$$-6x+18=3x-2$$

$$-6x-3x=-2-18$$

$$-9x=-20$$

$$x=\frac{20}{9}$$

$$(8) \quad -3x + \frac{1}{2} = \frac{x}{2} - 1$$

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

$$-6x+1=x-2$$

$$-6x-x=-2-1$$

$$-7x=-3$$

$$x=\frac{-3}{-7}$$

$$x=\frac{3}{7}$$

$$(9) \quad -x + \frac{1}{2} = 2x - \frac{1}{3}$$

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

$$-6x+3=12x-2$$

$$-6x-12x=-2-3$$

$$-18x=-5$$

$$x=\frac{-5}{-18}$$

$$x=\frac{5}{18}$$

$$(10) \quad -x + \frac{1}{2} = \frac{2}{3} + 2x$$

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

$$-6x+3=4+12x$$

$$-6x-12x=4-3$$

$$-18x=1$$

$$x=\frac{1}{-18}$$

$$x=-\frac{1}{18}$$

$$(11) \quad \frac{1}{2} + 3x = 4x + \frac{2}{3}$$

$$6(\frac{1}{2} + 3x) = 6(4x + \frac{2}{3})$$

$$3+18x=24x+4$$

$$18x-24x=4-3$$

$$-6x=1$$

$$x=\frac{1}{-6}$$

$$x=-\frac{1}{6}$$

$$(12) -x + \frac{1}{2} = -2x + 4$$

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

$$-2x+1=-4x+8$$

$$-2x+4x=8-1$$

$$2x=7$$

$$x=\frac{7}{2}$$

| 習題                                         | 答案                 |
|--------------------------------------------|--------------------|
| (1) $\frac{1}{2} - 3x = -4x + 1$           | $x=\frac{1}{2}$    |
| (2) $-x + \frac{1}{2} = \frac{1}{2}x - 3$  | $x=\frac{7}{3}$    |
| (3) $-\frac{1}{2}x + 1 = \frac{1}{2}x - 3$ | $x=4$              |
| (4) $-\frac{3}{2}x + 1 = \frac{1}{3}x - 1$ | $x=\frac{12}{11}$  |
| (5) $-x - \frac{1}{2} = \frac{1}{3} + x$   | $x=-\frac{5}{12}$  |
| (6) $-\frac{3}{2}x - 2 = \frac{1}{3}x + 1$ | $x=-\frac{18}{11}$ |
| (7) $-x + \frac{1}{2} = \frac{1}{3} + x$   | $x=\frac{1}{12}$   |
| (8) $x + \frac{1}{2} = 2x - \frac{1}{2}$   | $x=1$              |
| (9) $\frac{x}{2} - \frac{1}{3} = x - 1$    | $x=\frac{4}{3}$    |

|                                                               |                    |
|---------------------------------------------------------------|--------------------|
| (10) $\frac{-x}{2} + \frac{1}{2} = \frac{x}{2} - 1$           | $x = \frac{3}{2}$  |
| (11) $x - \frac{1}{2} = \frac{1}{3} + 2x$                     | $x = -\frac{5}{6}$ |
| (12) $\frac{1}{3}x - \frac{1}{2} = \frac{x}{2} - \frac{1}{3}$ | $x = -1$           |
| (13) $\frac{2}{3}x - 1 = 1 + \frac{x}{2}$                     | $x = 12$           |
| (14) $1 - \frac{x}{2} = \frac{x}{2} + \frac{1}{3}$            | $x = \frac{2}{3}$  |