

1. 1次方程式（分母を払う・改良版） その1

(1) $\frac{1}{2}(-x+2) + \frac{1}{4}(-3x+3) = 0$

(2) $\frac{1}{3}(-x+4) - \frac{1}{6}(-x-8) = 0$

(3) $\frac{1}{3}(-x-8) + \frac{1}{8}(x-2) = 0$

(4) $\frac{1}{3}(-2x-7) = \frac{1}{9}(4x+2)$

(5) $\frac{-13x-9}{15} - \frac{-x-6}{8} = -x$

(6) $\frac{3x+10}{3} + \frac{x+1}{6} = 0$

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

(8) $\frac{1}{6}(x+2) + \frac{1}{4}(x+8) = 0$

(9) $\frac{4x+5}{9} = \frac{-2x+2}{3}$

(10) $\frac{1}{3}(3x-1) - \frac{1}{2}(-x-7) = 0$

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

(12) $\frac{1}{3}(x+5) - \frac{1}{12}(-2x-1) = 0$

2. 1次方程式（分母を払う・改良版） その2

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

$$(2) \frac{2x+4}{15} - \frac{2x+9}{12} = 0$$

$$(3) \frac{-2x-3}{2} - \frac{-x+3}{4} = 0$$

$$(4) \frac{1}{6}(4x-7) - \frac{1}{4}(x+5) = 0$$

$$(5) \frac{8x+5}{6} + \frac{-x+1}{2} = x$$

$$(6) \frac{3x+1}{8} + \frac{x+9}{4} = 0$$

$$(7) \frac{1}{12}(3x-10) + \frac{1}{3}(-3x-4) = 0$$

$$(8) \frac{1}{4}(-x+4) - \frac{1}{3}(x+6) = 0$$

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

$$(10) \frac{6x+3}{8} + \frac{-x-3}{5} = x$$

$$(11) \frac{1}{4}(x-1) - \frac{1}{6}(2x-1) = 0$$

$$(12) \frac{1}{6}(-2x-1) + \frac{1}{9}(2x-2) = 0$$

3. 1次方程式（分母を払う・改良版） その3

(1)
$$\frac{3x+1}{3} - \frac{-2x+5}{6} = 0$$

(2)
$$\frac{1}{5}(4x-6) - \frac{1}{6}(-2x-3) = x$$

(3)
$$\frac{x+6}{8} + \frac{2x-7}{9} = 0$$

(4)
$$\frac{x-6}{15} + \frac{-x+8}{9} = 0$$

(5)
$$\frac{2x+1}{3} + \frac{-x+5}{6} = 0$$

(6)
$$\frac{1}{3}(-2x-9) - \frac{1}{5}(2x-10) = 0$$

(7)
$$\frac{-x+5}{12} = \frac{2x+1}{6}$$

(8)
$$\frac{3x-3}{2} - \frac{x-5}{6} = x$$

(9)
$$\frac{1}{12}(4x-5) + \frac{1}{2}(-x+2) = 0$$

(10)
$$\frac{1}{3}(4x+5) + \frac{1}{5}(2x-7) = 0$$

(11)
$$\frac{1}{2}(-x-10) - \frac{1}{4}(3x-3) = 0$$

(12)
$$\frac{-2x+9}{8} + \frac{-x+5}{2} = 0$$

4. 1次方程式（分母を払う・改良版） その4

(1) $\frac{1}{12}(4x - 1) = \frac{1}{3}(4x - 10)$

(2) $\frac{1}{6}(3x - 7) = \frac{1}{3}(4x - 3)$

(3) $\frac{17x - 9}{15} + \frac{-3x + 7}{9} = x$

(4) $\frac{2x + 3}{12} = \frac{-x - 8}{4}$

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

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

(7) $\frac{x + 2}{3} - \frac{2x + 3}{12} = 0$

(8) $\frac{-x - 7}{3} = \frac{x + 4}{6}$

(9) $\frac{1}{5}(2x - 2) + \frac{1}{3}(-2x - 4) = 0$

(10) $\frac{1}{4}(-5x + 8) - \frac{1}{5}(2x + 9) = -x$

(11) $\frac{-x + 10}{12} = \frac{2x + 5}{4}$

(12) $\frac{1}{9}(-2x + 1) - \frac{1}{3}(2x - 1) = 0$

5. 1次方程式（分母を払う・改良版） その5

(1)
$$\frac{x-5}{6} - \frac{2x+5}{4} = 0$$

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

(3)
$$\frac{-2x+1}{6} - \frac{-x-3}{4} = 0$$

(4)
$$\frac{1}{5}(8x+8) - \frac{1}{3}(4x+4) = x$$

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

(6)
$$\frac{3x+7}{4} = \frac{3x+4}{8}$$

(7)
$$\frac{-9x+7}{12} - \frac{x-3}{3} = -x$$

(8)
$$\frac{-x-3}{15} = \frac{x-1}{6}$$

(9)
$$\frac{-6x+3}{8} - \frac{x+1}{12} = -x$$

(10)
$$\frac{x-5}{6} - \frac{-2x-9}{4} = 0$$

(11)
$$\frac{-x-9}{4} + \frac{x+5}{3} = 0$$

(12)
$$\frac{2x+3}{15} - \frac{-x-5}{3} = 0$$

6. 1次方程式（分母を払う・改良版） その6

(1) $\frac{1}{4}(4x+5) + \frac{1}{6}(-4x-9) = 0$

(2) $\frac{1}{3}(4x+9) = \frac{1}{6}(2x-3)$

(3) $\frac{-2x+7}{9} + \frac{-3x-8}{5} = 0$

(4) $\frac{x-3}{4} + \frac{-3x-5}{5} = 0$

(5) $\frac{1}{4}(x-6) = \frac{1}{5}(-x+9)$

(6) $\frac{1}{3}(-2x+4) + \frac{1}{9}(2x-4) = 0$

(7) $\frac{1}{9}(10x-5) - \frac{1}{6}(x-8) = x$

(8) $\frac{1}{12}(-11x-4) - \frac{1}{2}(3x-5) = -x$

(9) $\frac{4x+3}{12} + \frac{x-3}{2} = 0$

(10) $\frac{-x-7}{3} + \frac{x+5}{2} = 0$

(11) $\frac{1}{3}(2x+4) - \frac{1}{9}(3x+4) = x$

(12) $\frac{x-4}{2} = \frac{-x-9}{5}$

7. 1次方程式（分母を払う・改良版） その7

$$(1) \frac{-x-1}{6} - \frac{x+6}{8} = 0$$

$$(2) \frac{-x+10}{2} + \frac{-x+4}{4} = 0$$

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

$$(4) \frac{-2x-4}{3} - \frac{2x+1}{9} = -x$$

$$(5) \frac{8x-7}{6} - \frac{-x+2}{3} = x$$

$$(6) \frac{19x-8}{15} - \frac{-x-4}{4} = x$$

$$(7) \frac{4x+1}{3} = \frac{x-6}{4}$$

$$(8) \frac{2x-1}{15} + \frac{-x-3}{5} = 0$$

$$(9) \frac{1}{5}(-x+2) + \frac{1}{9}(2x-4) = 0$$

$$(10) \frac{-x+7}{12} + \frac{-x-6}{9} = 0$$

$$(11) \frac{3x+1}{4} + \frac{-3x-8}{2} = 0$$

$$(12) \frac{3x+1}{6} = \frac{4x+5}{4}$$

8. 1次方程式（分母を払う・改良版） その8

(1)
$$\frac{-x+1}{12} + \frac{-x-1}{8} = 0$$

(2)
$$\frac{2x+3}{8} = \frac{3x-4}{2}$$

(3)
$$\frac{-2x+1}{6} = \frac{-2x-5}{9}$$

(4)
$$\frac{x-8}{6} + \frac{-3x-7}{3} = 0$$

(5)
$$\frac{x-1}{4} - \frac{x-8}{3} = 0$$

(6)
$$\frac{-9x-5}{12} - \frac{4x+3}{9} = -x$$

(7)
$$\frac{-x+3}{6} = \frac{4x+3}{12}$$

(8)
$$\frac{1}{6}(4x-9) - \frac{1}{3}(-2x+3) = 0$$

(9)
$$\frac{-x-6}{4} + \frac{-x+1}{3} = 0$$

(10)
$$\frac{-11x+8}{15} + \frac{-4x-9}{12} = -x$$

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

(12)
$$\frac{2x+3}{3} + \frac{x-7}{2} = x$$

9. 1次方程式（分母を払う・改良版） その9

(1) $\frac{1}{12}(13x - 10) - \frac{1}{6}(-x - 2) = x$

(2) $\frac{-x - 3}{4} + \frac{-3x + 1}{6} = 0$

(3) $\frac{x + 7}{4} = \frac{4x - 1}{3}$

(4) $\frac{1}{3}(x + 2) = \frac{1}{5}(2x + 10)$

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

(6) $\frac{1}{2}(x + 10) - \frac{1}{12}(-x - 10) = x$

(7) $\frac{1}{4}(4x + 7) + \frac{1}{6}(x - 6) = 0$

(8) $\frac{1}{4}(2x + 5) - \frac{1}{3}(x - 3) = 0$

(9) $\frac{-2x - 1}{5} - \frac{2x + 9}{9} = 0$

(10) $\frac{1}{3}(7x - 5) - \frac{1}{2}(3x - 4) = x$

(11) $\frac{4x + 4}{3} + \frac{x - 5}{5} = x$

(12) $\frac{7x - 10}{8} + \frac{2x + 2}{3} = x$

10. 1次方程式（分母を払う・改良版） その10

(1)
$$\frac{3x+7}{9} = \frac{-x+3}{8}$$

(2)
$$\frac{-x-8}{4} + \frac{-4x+7}{9} = -x$$

(3)
$$\frac{1}{5}(8x-9) - \frac{1}{3}(-x-5) = x$$

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

(5)
$$\frac{1}{6}(-x+7) + \frac{1}{9}(-3x-8) = 0$$

(6)
$$\frac{2x-5}{6} = \frac{2x+3}{8}$$

(7)
$$\frac{5x+5}{6} + \frac{-x-1}{2} = x$$

(8)
$$\frac{3x+6}{4} = \frac{-x+9}{2}$$

(9)
$$\frac{1}{3}(2x-3) = \frac{1}{8}(2x-3)$$

(10)
$$\frac{1}{12}(3x+5) = \frac{1}{9}(2x+8)$$

(11)
$$\frac{-x+6}{8} = \frac{2x-3}{12}$$

(12)
$$\frac{1}{4}(x-3) - \frac{1}{6}(2x+1) = 0$$

11. 1次方程式（分母を払う・改良版） その11

$$(1) \frac{12x-3}{8} - \frac{x+8}{9} = x$$

$$(2) \frac{8x-2}{9} + \frac{2x-3}{4} = x$$

$$(3) \frac{1}{3}(-x-3) = \frac{1}{12}(-x-8)$$

$$(4) \frac{11x-10}{9} - \frac{-x+3}{3} = x$$

$$(5) \frac{9x+8}{5} + \frac{-x-5}{2} = x$$

$$(6) \frac{8x+4}{5} + \frac{-x-4}{12} = x$$

$$(7) \frac{1}{5}(-x-6) - \frac{1}{6}(x-7) = 0$$

$$(8) \frac{2x+1}{4} + \frac{2x-3}{5} = x$$

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

$$(10) \frac{4x+7}{2} + \frac{-3x-4}{6} = x$$

$$(11) \frac{1}{9}(4x+6) + \frac{1}{3}(-3x+2) = 0$$

$$(12) \frac{-5x-6}{6} - \frac{-x-8}{3} = -x$$

12. 1次方程式（分母を払う・改良版） その12

(1) $\frac{1}{12}(-2x+9) + \frac{1}{5}(x-4) = 0$

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

(3) $\frac{-x+3}{6} + \frac{-x-1}{2} = 0$

(4) $\frac{1}{6}(x-2) + \frac{1}{12}(-3x-8) = 0$

(5) $\frac{-5x+4}{4} + \frac{-x+8}{2} = -x$

(6) $\frac{1}{15}(-x-5) = \frac{1}{8}(-x+9)$

(7) $\frac{1}{2}(-x-2) - \frac{1}{8}(-2x+3) = 0$

(8) $\frac{1}{3}(x+1) + \frac{1}{3}(2x+5) = 0$

(9) $\frac{-3x-7}{2} - \frac{-x-1}{5} = -x$

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

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

(12) $\frac{14x+9}{12} - \frac{x-2}{4} = x$