

『数が苦』を『数楽』に その46

方程式の解き方1 [両辺にたす・両辺からひく]

次の方程式を解け。

$$\begin{aligned} \textcircled{1} \quad x + 3 &= 8 \\ x + 3 - 3 &= 8 - 3 \\ x &= 5 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad x + 6 &= 3 \\ x + 6 - 6 &= 3 - 6 \\ x &= -3 \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad x + 1 &= -5 \\ x + 1 - 1 &= -5 - 1 \\ x &= -6 \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad 8 + x &= -4 \\ 8 + x - 8 &= -4 - 8 \\ x &= -12 \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad x - 3 &= 8 \\ x - 3 + 3 &= 8 + 3 \\ x &= 11 \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad x - 6 &= 3 \\ x - 6 + 6 &= 3 + 6 \\ x &= 9 \end{aligned}$$

$$\begin{aligned} \textcircled{7} \quad x - 1 &= -5 \\ x - 1 + 1 &= -5 + 1 \\ x &= -4 \end{aligned}$$

$$\begin{aligned} \textcircled{8} \quad -8 + x &= -4 \\ -8 + x + 8 &= -4 + 8 \\ x &= 4 \end{aligned}$$

$$\begin{aligned} \textcircled{9} \quad x + 0.2 &= 0.8 \\ x + 0.2 - 0.2 &= 0.8 - 0.2 \\ x &= 0.6 \end{aligned}$$

$$\begin{aligned} \textcircled{10} \quad x + 0.7 &= -0.3 \\ x + 0.7 - 0.7 &= -0.3 - 0.7 \\ x &= -1 \end{aligned}$$

$$\begin{aligned} \textcircled{11} \quad x - 0.3 &= 0.7 \\ x - 0.3 + 0.3 &= 0.7 + 0.3 \\ x &= 1 \end{aligned}$$

$$\begin{aligned} \textcircled{12} \quad x - 0.6 &= -0.7 \\ x - 0.6 + 0.6 &= -0.7 + 0.6 \\ x &= -0.1 \end{aligned}$$

$$\begin{aligned} \textcircled{13} \quad x + \frac{2}{5} &= \frac{3}{5} \\ x + \frac{2}{5} - \frac{2}{5} &= \frac{3}{5} - \frac{2}{5} \\ x &= \frac{1}{5} \end{aligned}$$

$$\begin{aligned} \textcircled{14} \quad x - \frac{3}{4} &= -\frac{5}{4} \\ x - \frac{3}{4} + \frac{3}{4} &= -\frac{5}{4} + \frac{3}{4} \\ x &= -\frac{1}{2} \end{aligned}$$

$$\begin{aligned} \textcircled{15} \quad x - \frac{2}{3} &= \frac{4}{3} \\ x - \frac{2}{3} + \frac{2}{3} &= \frac{4}{3} + \frac{2}{3} \\ x &= 2 \end{aligned}$$

$$\begin{aligned} \textcircled{16} \quad x - \frac{3}{7} &= -\frac{5}{7} \\ x - \frac{3}{7} + \frac{3}{7} &= -\frac{5}{7} + \frac{3}{7} \\ x &= -\frac{2}{7} \end{aligned}$$

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方程式の解き方2 [両辺にかける・両辺をわる]

次の方程式を解け。

① $2x = 8$

$$\frac{2x}{2} = \frac{8}{2}$$
$$x = 8$$

② $3x = -12$

$$\frac{3x}{3} = \frac{-12}{3}$$
$$x = -4$$

③ $-4x = 12$

$$\frac{-4x}{-4} = \frac{12}{-4}$$
$$x = -3$$

④ $-5x = -40$

$$\frac{-5x}{-5} = \frac{-40}{-5}$$
$$x = 8$$

⑤ $3x = 5$

$$\frac{3x}{3} = \frac{5}{3}$$
$$x = \frac{5}{3}$$

⑥ $4x = -10$

$$\frac{4x}{4} = \frac{-10}{4}$$
$$x = -\frac{5}{2}$$

⑦ $-6x = 10$

$$\frac{-6x}{-6} = \frac{10}{-6}$$
$$x = -\frac{5}{3}$$

⑧ $-8x = -8$

$$\frac{-8x}{-8} = \frac{-8}{-8}$$
$$x = 1$$

⑨ $\frac{x}{5} = 6$

$$5 \times \frac{x}{5} = 6 \times 5$$
$$x = 30$$

⑩ $\frac{x}{3} = -4$

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

⑪ $-\frac{x}{4} = -3$

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

⑫ $-\frac{x}{4} = \frac{3}{4}$

$$-4 \times \left(-\frac{x}{4}\right) = -4 \times \frac{3}{4}$$
$$x = -3$$

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方程式の解き方3 [数の移項]

次の方程式を解け。

$$\begin{aligned} \textcircled{1} \quad 2x + 3 &= 7 \\ 2x &= 7 - 3 \\ \frac{2x}{2} &= \frac{4}{2} \\ x &= 2 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad 3x + 9 &= 3 \\ 3x &= 3 - 9 \\ \frac{3x}{3} &= \frac{-6}{3} \\ x &= -2 \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad -4x + 1 &= 5 \\ -4x &= 5 - 1 \\ \frac{-4x}{-4} &= \frac{4}{-4} \\ x &= -1 \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad 8 - 2x &= -4 \\ -2x &= -4 - 8 \\ \frac{-2x}{-2} &= \frac{-12}{-2} \\ x &= 6 \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad 3x - 3 &= 9 \\ 3x &= 9 + 3 \\ \frac{3x}{3} &= \frac{12}{3} \\ x &= 4 \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad -3x - 6 &= 3 \\ -3x &= 3 + 6 \\ \frac{-3x}{-3} &= \frac{9}{-3} \\ x &= -3 \end{aligned}$$

$$\begin{aligned} \textcircled{7} \quad -4x - 1 &= -5 \\ -4x &= -5 + 1 \\ \frac{-4x}{-4} &= \frac{-4}{-4} \\ x &= 1 \end{aligned}$$

$$\begin{aligned} \textcircled{8} \quad -8 + 2x &= -4 \\ 2x &= -4 + 8 \\ \frac{2x}{2} &= \frac{4}{2} \\ x &= 2 \end{aligned}$$

$$\begin{aligned} \textcircled{9} \quad 3x + 2 &= 6 \\ 3x &= 6 - 2 \\ \frac{3x}{3} &= \frac{4}{3} \\ x &= \frac{4}{3} \end{aligned}$$

$$\begin{aligned} \textcircled{10} \quad 4x + 7 &= 9 \\ 4x &= 9 - 7 \\ \frac{4x}{4} &= \frac{2}{4} \\ x &= \frac{1}{2} \end{aligned}$$

$$\begin{aligned} \textcircled{11} \quad -6x - 1 &= 9 \\ -6x &= 9 + 1 \\ \frac{-6x}{-6} &= \frac{10}{-6} \\ x &= -\frac{5}{3} \end{aligned}$$

$$\begin{aligned} \textcircled{12} \quad -x - 6 &= -8 \\ -x &= -8 + 6 \\ \frac{-x}{-1} &= \frac{-2}{-1} \\ x &= 2 \end{aligned}$$

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方程式の解き方4 [文字の移項]

次の方程式を解け。

$$\begin{aligned} \textcircled{1} \quad & 2x = 10 - 3x \\ & 2x + 3x = 10 \\ & \frac{5x}{5} = \frac{10}{5} \\ & x = 2 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad & 3x = 8 + x \\ & 3x - x = 8 \\ & \frac{2x}{2} = \frac{8}{2} \\ & x = 4 \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad & -4x = 5 + x \\ & -4x - x = 5 \\ & \frac{-5x}{-5} = \frac{5}{-5} \\ & x = -1 \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad & -2x = -5x + 6 \\ & -2x + 5x = 6 \\ & \frac{3x}{3} = \frac{6}{3} \\ & x = 3 \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad & 2x = 5x + 9 \\ & 2x - 5x = 9 \\ & \frac{-3x}{-3} = \frac{9}{-3} \\ & x = -3 \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad & -3x = 3 - 6x \\ & -3x + 6x = 3 \\ & \frac{3x}{3} = \frac{3}{3} \\ & x = 1 \end{aligned}$$

$$\begin{aligned} \textcircled{7} \quad & -4x = -5 + x \\ & -4x - x = -5 \\ & \frac{-5x}{-5} = \frac{-5}{-5} \\ & x = 1 \end{aligned}$$

$$\begin{aligned} \textcircled{8} \quad & 2x = -4x + 7 \\ & 2x + 4x = 7 \\ & \frac{6x}{6} = \frac{7}{6} \\ & x = \frac{7}{6} \end{aligned}$$

$$\begin{aligned} \textcircled{9} \quad & 6x = 2x - 10 \\ & 6x - 2x = -10 \\ & \frac{4x}{4} = \frac{-10}{4} \\ & x = \frac{-5}{2} \end{aligned}$$

$$\begin{aligned} \textcircled{10} \quad & -3x = 9 + 5x \\ & -3x - 5x = 9 \\ & \frac{-8x}{-8} = \frac{9}{-8} \\ & x = -\frac{9}{8} \end{aligned}$$

$$\begin{aligned} \textcircled{11} \quad & 6x = 7x - 12 \\ & 6x - 7x = -12 \\ & \frac{-x}{-1} = \frac{-12}{-1} \\ & x = 12 \end{aligned}$$

$$\begin{aligned} \textcircled{12} \quad & -x = 7x - 4 \\ & -x - 7x = -4 \\ & \frac{-8x}{-8} = \frac{-4}{-8} \\ & x = \frac{1}{2} \end{aligned}$$

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方程式の解き方5 [数と文字の移項]

次の方程式を解け。

$$\begin{aligned} \textcircled{1} \quad & 2x - 5 = 10 - 3x \\ & 2x + 3x = 10 + 5 \\ & 5x = 15 \\ & \frac{5x}{5} = \frac{15}{5} \\ & x = 3 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad & 3x - 4 = 8 + x \\ & 3x - x = 8 + 4 \\ & 2x = 12 \\ & \frac{2x}{2} = \frac{12}{2} \\ & x = 6 \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad & -4x - 10 = 5 + x \\ & -4x - x = 10 + 5 \\ & -5x = 15 \\ & \frac{-5x}{-5} = \frac{15}{-5} \\ & x = -3 \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad & -2x - 9 = -5x + 6 \\ & -2x + 5x = 6 + 9 \\ & 3x = 15 \\ & \frac{3x}{3} = \frac{15}{3} \\ & x = 5 \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad & 2x - 3 = 5x + 9 \\ & 2x - 5x = 9 + 3 \\ & -3x = 12 \\ & \frac{-3x}{-3} = \frac{12}{-3} \\ & x = -4 \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad & -3x + 12 = 3 - 6x \\ & -3x + 6x = 3 - 12 \\ & 3x = -9 \\ & \frac{3x}{3} = \frac{-9}{3} \\ & x = -3 \end{aligned}$$

$$\begin{aligned} \textcircled{7} \quad & -4x + 20 = -5 + x \\ & -4x - x = -5 - 20 \\ & -5x = -25 \\ & \frac{-5x}{-5} = \frac{-25}{-5} \\ & x = 5 \end{aligned}$$

$$\begin{aligned} \textcircled{8} \quad & 2x - 8 = 4x + 6 \\ & 2x - 4x = 8 + 6 \\ & -2x = 14 \\ & \frac{-2x}{-2} = \frac{14}{-2} \\ & x = -7 \end{aligned}$$

$$\begin{aligned} \textcircled{9} \quad & 6x - 15 = 2x - 10 \\ & 6x - 2x = -10 + 15 \\ & 4x = 5 \\ & \frac{4x}{4} = \frac{5}{4} \\ & x = \frac{5}{4} \end{aligned}$$

$$\begin{aligned} \textcircled{10} \quad & -3x + 1 = 9 + 5x \\ & -3x - 5x = 9 - 1 \\ & -8x = 8 \\ & \frac{-8x}{-8} = \frac{8}{-8} \\ & x = -1 \end{aligned}$$

$$\begin{aligned} \textcircled{11} \quad & 6x - 1 = 7x - 12 \\ & 6x - 7x = -12 + 1 \\ & -x = -11 \\ & \frac{-x}{-1} = \frac{-11}{-1} \\ & x = 11 \end{aligned}$$

$$\begin{aligned} \textcircled{12} \quad & -x + 2 = 7x - 4 \\ & -x - 7x = -4 - 2 \\ & -8x = -6 \\ & \frac{-8x}{-8} = \frac{-6}{-8} \\ & x = \frac{6}{8} \end{aligned}$$

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方程式の解き方6 [かっこの付いた式]

次の方程式を解け。

$$\begin{aligned} \textcircled{1} \quad & 2(2x - 5) = 10 - x \\ & 4x - 10 = 10 - x \\ & 4x + x = 10 + 10 \\ & \frac{5x}{5} = \frac{20}{5} \\ & x = 4 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad & 5x - 4 = 3(8 + x) \\ & 5x - 4 = 24 + 3x \\ & 5x - 3x = 24 + 4 \\ & \frac{2x}{2} = \frac{28}{2} \\ & x = 14 \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad & -4(-4x - 10) = -5 + x \\ & 16x + 40 = -5 + x \\ & 16x - x = -5 - 40 \\ & \frac{15x}{15} = \frac{-45}{15} \\ & x = -3 \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad & 2x + 9 = -(-5x + 6) \\ & 2x + 9 = 5x - 6 \\ & 2x - 5x = -6 - 9 \\ & \frac{-3x}{-3} = \frac{-15}{-3} \\ & x = 5 \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad & 3(3x - 4) = 2(2x + 4) \\ & 9x - 12 = 4x + 8 \\ & 9x - 4x = 8 + 12 \\ & \frac{5x}{5} = \frac{20}{5} \\ & x = 4 \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad & -4(x - 5) = -(5 - x) \\ & -4x + 20 = -5 + x \\ & -4x - x = -5 - 20 \\ & \frac{-5x}{-5} = \frac{-25}{-5} \\ & x = 5 \end{aligned}$$

$$\begin{aligned} \textcircled{7} \quad & 2(3x - 1) + 5 = 5x - 9 \\ & 6x - 2 + 5 = 5x - 9 \\ & 6x - 5x = -9 + 2 - 5 \\ & x = -12 \end{aligned}$$

$$\begin{aligned} \textcircled{8} \quad & 5x + 3(5 - x) = 21 \\ & 5x + 15 - 3x = 21 \\ & 5x - 3x = 21 - 15 \\ & \frac{2x}{2} = \frac{6}{2} \\ & x = 3 \end{aligned}$$

$$\begin{aligned} \textcircled{9} \quad & 2(x - 4) + 2(2x + 3) = 14 \\ & 2x - 8 + 4x + 6 = 14 \\ & 2x + 4x = 14 + 8 - 6 \\ & \frac{6x}{6} = \frac{16}{6} \\ & x = \frac{8}{3} \end{aligned}$$

$$\begin{aligned} \textcircled{10} \quad & 3(x + 4) - 2(3x - 5) = -2 \\ & 3x + 12 - 6x + 10 = -2 \\ & 3x - 6x = -2 - 12 - 10 \\ & \frac{-3x}{-3} = \frac{-24}{-3} \\ & x = 8 \end{aligned}$$

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方程式の解き方7 [小数の入った式]

次の方程式を解け。

$$\begin{aligned}\textcircled{1} \quad 0.1x + 0.2 &= 0.8 \\ x + 2 &= 8 \\ x &= 8 - 2\end{aligned}$$

$$\begin{aligned}\textcircled{2} \quad -0.1x + 0.7 &= -0.3 \\ -x + 7 &= -3 \\ -x &= -3 - 7 \\ \frac{-x}{-1} &= \frac{-10}{-1} \\ x &= 10\end{aligned}$$

$$\begin{aligned}\textcircled{3} \quad 0.2x + 0.3 &= 0.7 \\ 2x + 3 &= 7 \\ 2x &= 7 - 3 \\ \frac{2x}{2} &= \frac{4}{2} \\ x &= 2\end{aligned}$$

$$\begin{aligned}\textcircled{4} \quad 0.8 - 0.2x &= -0.4 \\ 8 - 2x &= -4 \\ -2x &= -4 - 8 \\ \frac{-2x}{-2} &= \frac{-12}{-2} \\ x &= 6\end{aligned}$$

$$\begin{aligned}\textcircled{5} \quad 0.01x - 0.3 &= 0.7 \\ x - 30 &= 70 \\ x &= 70 + 30 \\ x &= 100\end{aligned}$$

$$\begin{aligned}\textcircled{6} \quad -0.1x - 0.06 &= -0.7 \\ -10x - 6 &= -70 \\ -10x &= -70 + 6 \\ \frac{-10x}{-10} &= \frac{-64}{-10} \\ x &= \frac{32}{5}\end{aligned}$$

$$\begin{aligned}\textcircled{7} \quad 0.6x &= 0.4x - 1 \\ 6x &= 4x - 10 \\ 6x - 4x &= -10 \\ \frac{2x}{2} &= \frac{-10}{2} \\ x &= -5\end{aligned}$$

$$\begin{aligned}\textcircled{8} \quad -0.3x - 0.7 &= 0.9 + 0.5x \\ -3x - 7 &= 9 + 5x \\ -3x - 5x &= 9 + 7 \\ \frac{-8x}{-8} &= \frac{16}{-8} \\ x &= -2\end{aligned}$$

$$\begin{aligned}\textcircled{9} \quad 0.6(x - 3) &= 0.7x - 1.2 \\ 0.6x - 1.8 &= 0.7x - 1.2 \\ 6x - 18 &= 7x - 12 \\ 6x - 7x &= -12 + 18 \\ \frac{-x}{-1} &= \frac{6}{-1} \\ x &= -6\end{aligned}$$

$$\begin{aligned}\textcircled{10} \quad 6(0.1x - 3) &= 2(0.7x - 0.2) \\ 0.6x - 18 &= 1.4x - 0.4 \\ 6x - 180 &= 14x - 4 \\ 6x - 14x &= -4 + 180 \\ \frac{-8x}{-8} &= \frac{176}{-8} \\ x &= -22\end{aligned}$$

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方程式の解き方8 [分数の入った式]

次の方程式を解け。

$$\begin{aligned} \textcircled{1} \quad \frac{1}{5}x + \frac{2}{5} &= \frac{3}{5} \\ \frac{5 \times 1}{5}x + \frac{5 \times 2}{5} &= \frac{5 \times 3}{5} \\ x + 2 &= 3 \\ x &= 3 - 2 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad \frac{7}{4}x - \frac{3}{4} &= -\frac{5}{4}x + \frac{3}{4} \\ \frac{4 \times 7}{4}x - \frac{4 \times 3}{4} &= -\frac{4 \times 5}{4}x + \frac{4 \times 3}{4} \\ 7x - 3 &= -5x + 3 \\ 7x + 5x &= 3 + 3 \\ \frac{12}{12}x &= \frac{6}{12} \\ x &= \frac{1}{2} \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad \frac{7}{2}x - \frac{3}{4} &= \frac{5}{4}x + \frac{3}{2} \\ \frac{4 \times 7}{2}x - \frac{4 \times 3}{4} &= \frac{4 \times 5}{4}x + \frac{4 \times 3}{2} \\ 14x - 3 &= 5x + 6 \\ 14x - 5x &= 6 + 3 \\ \frac{9x}{9} &= \frac{9}{9} \\ x &= 1 \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad \frac{3}{2}x - \frac{4}{3} &= -\frac{2}{3}x + \frac{3}{2} \\ \frac{6 \times 3}{2}x - \frac{6 \times 4}{3} &= -\frac{6 \times 2}{3}x + \frac{6 \times 3}{2} \\ 9x - 8 &= -4x + 9 \\ 9x + 4x &= 9 + 8 \\ \frac{13x}{13} &= \frac{17}{13} \\ x &= \frac{17}{13} \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad \frac{7}{3}x + \frac{3}{4} &= -\frac{5}{4}x + \frac{5}{3} \\ \frac{12 \times 7}{3}x + \frac{12 \times 3}{4} &= -\frac{12 \times 5}{4}x + \frac{12 \times 5}{3} \\ 28x + 9 &= -15x + 20 \\ 28x + 15x &= 20 - 9 \\ \frac{43x}{43} &= \frac{11}{43} \\ x &= \frac{11}{43} \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad \frac{3}{5}x - \frac{3}{5} &= -\frac{5}{3}x + \frac{4}{3} \\ \frac{15 \times 3}{5}x - \frac{15 \times 3}{5} &= -\frac{15 \times 5}{3}x + \frac{15 \times 4}{3} \\ 9x - 9 &= -25x + 20 \\ 9x + 25x &= 20 + 9 \\ \frac{34x}{34} &= \frac{29}{34} \\ x &= \frac{29}{34} \end{aligned}$$

$$\begin{aligned} \textcircled{7} \quad \frac{7}{2}x - \frac{3}{4} &= \frac{5}{3}x + \frac{3}{4} \\ \frac{12 \times 7}{2}x - \frac{12 \times 3}{4} &= \frac{12 \times 5}{3}x + \frac{12 \times 3}{4} \\ 42x - 9 &= 20x + 9 \\ 42x - 20x &= 9 + 9 \\ \frac{22x}{22} &= \frac{18}{22} \\ x &= \frac{9}{11} \end{aligned}$$

$$\begin{aligned} \textcircled{8} \quad \frac{2}{3}x - \frac{3}{5} &= \frac{5}{4}x - \frac{3}{5} \\ \frac{60 \times 2}{3}x - \frac{60 \times 3}{5} &= \frac{60 \times 5}{4}x - \frac{60 \times 3}{5} \\ 40x - 36 &= 75x - 36 \\ 40x - 75x &= -36 + 36 \\ \frac{-35x}{-35} &= \frac{0}{-35} \\ x &= 0 \end{aligned}$$

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方程式の解き方9 [分数の入った式2]

次の方程式を解け。

$$\textcircled{1} \quad \frac{x-4}{5} = 2$$

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

$$(x-4) = 10$$

$$x-4 = 10$$

$$x = 10 + 4$$

$$x = 14$$

$$\textcircled{3} \quad \frac{x-4}{5} + \frac{2}{3} = 4$$

$$\frac{15(x-4)}{5} + \frac{15 \times 2}{3} = 4 \times 15$$

$$3(x-4) + 10 = 60$$

$$3x - 12 + 10 = 60$$

$$3x = 60 + 12 - 10$$

$$\frac{3x}{3} = \frac{62}{3}$$

$$x = \frac{62}{3}$$

$$\textcircled{5} \quad \frac{3x-5}{4} + \frac{2x+4}{3} = 1$$

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

$$3(3x-5) + 4(2x+4) = 12$$

$$9x - 15 + 8x + 16 = 12$$

$$9x + 8x = 12 + 15 - 16$$

$$\frac{17x}{17} = \frac{11}{17}$$

$$x = \frac{11}{17}$$

$$\textcircled{7} \quad \frac{3x-5}{4} = \frac{2x+4}{3} - 5$$

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

$$3(3x-5) = 4(2x+4) - 60$$

$$9x - 15 = 8x + 16 - 60$$

$$9x - 8x = 16 - 60 + 15$$

$$x = -29$$

$$\textcircled{2} \quad \frac{3x-5}{4} = \frac{2x+4}{3}$$

$$\frac{12(3x-5)}{4} = \frac{12(2x+4)}{3}$$

$$3(3x-5) = 4(2x+4)$$

$$9x - 15 = 8x + 16$$

$$9x - 8x = 16 + 15$$

$$x = 31$$

$$\textcircled{4} \quad \frac{x-4}{5} + \frac{2}{3}x = 1$$

$$\frac{15(x-4)}{5} + \frac{15 \times 2}{3}x = 1 \times 15$$

$$3(x-4) + 10x = 15$$

$$3x - 12 + 10x = 15$$

$$3x + 10x = 15 + 12$$

$$\frac{13x}{13} = \frac{27}{13}$$

$$x = \frac{27}{13}$$

$$\textcircled{6} \quad \frac{3x-5}{2} - \frac{2x+4}{3} = 2$$

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

$$3(3x-5) - 2(2x+4) = 12$$

$$9x - 15 - 4x - 8 = 12$$

$$9x - 4x = 12 + 15 + 8$$

$$\frac{5x}{5} = \frac{35}{5}$$

$$x = 7$$

$$\textcircled{8} \quad \frac{3x-5}{4} - \frac{2x+4}{3} = \frac{3}{5}$$

$$\frac{60(3x-5)}{4} - \frac{60(2x+4)}{3} = \frac{60 \times 3}{5}$$

$$15(3x-5) - 20(2x+4) = 36$$

$$45x - 75 - 40x - 80 = 36$$

$$45x - 40x = 36 + 75 + 80$$

$$\frac{5x}{5} = \frac{191}{5}$$

$$x = \frac{191}{5}$$