

Year 9 Equations : Answers

① Solve

$$\begin{aligned} \text{a)} \quad x+4 &= 7 \\ x &= 7-4 \\ x &= 3 \end{aligned}$$

$$\begin{aligned} \text{b)} \quad x-3 &= 8 \\ x &= 8+3 \\ x &= 11 \end{aligned}$$

$$\begin{aligned} \text{c)} \quad 9 &= x+2 \\ 9-2 &= x \\ 7 &= x \end{aligned}$$

$$\begin{aligned} \text{d)} \quad 10 &= x-5 \\ 10+5 &= x \\ 15 &= x \end{aligned}$$

$$\begin{aligned} \text{e)} \quad 2x &= 8 \\ x &= \frac{8}{2} \\ x &= 4 \end{aligned}$$

$$\begin{aligned} \text{f)} \quad 10 &= 5x \\ \frac{10}{5} &= x \\ 2 &= x \end{aligned}$$

$$\begin{aligned} \text{g)} \quad \frac{x}{2} &= 7 \\ x &= 7 \times 2 \\ x &= 14 \end{aligned}$$

$$\begin{aligned} \text{h)} \quad \frac{x}{3} &= 4 \\ x &= 4 \times 3 \\ x &= 12 \end{aligned}$$

$$\begin{aligned} \text{i)} \quad 3x &= 1 \\ x &= \frac{1}{3} \end{aligned}$$

$$\begin{aligned} \text{j)} \quad 7 &= 9x \\ \frac{7}{9} &= x \end{aligned}$$

② Solve

$$\begin{aligned} \text{a)} \quad 12x + 3 &= 11x + 5 \\ 12x - 11x &= 5 - 3 \\ x &= 2 \end{aligned}$$

$$\begin{aligned} \text{b)} \quad 8x - 3 &= 7x + 2 \\ 8x - 7x &= 2 + 3 \\ x &= 5 \end{aligned}$$

$$\begin{aligned} \text{c)} \quad 5x - 3 &= 6x - 7 \\ -3 + 7 &= 6x - 5x \\ 4 &= x \end{aligned}$$

$$\begin{aligned} \text{d)} \quad 3x + 4 &= 4x - 3 \\ 4 + 3 &= 4x - 3x \\ 7 &= x \end{aligned}$$

$$\begin{aligned} \text{e)} \quad 4x + 1 &= 9 \\ 4x &= 9 - 1 \\ 4x &= 8 \\ x &= \frac{8}{4} \\ x &= 2 \end{aligned}$$

$$\begin{aligned} \text{f)} \quad 8 &= 7x + 1 \\ 8 - 1 &= 7x \\ 7 &= 7x \\ \frac{7}{7} &= x \\ 1 &= x \end{aligned}$$

③ Solve

a) $7x + 3 = 5x + 11$

$$7x - 5x = 11 - 3$$

$$2x = 8$$

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

$$x = 4$$

b) $13x - 2 = 10x + 10$

$$13x - 10x = 10 + 2$$

$$3x = 12$$

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

$$x = 4$$

c) $4x + 7 = 9x - 8$

$$7 + 8 = 9x - 5x$$

$$15 = 4x$$

$$\frac{15}{4} = x$$

d) $2x + 140 = 6x + 80$

$$140 - 80 = 6x - 2x$$

$$60 = 4x$$

$$\frac{60}{4} = x$$

$$15 = x$$

e) $2x + 5 = 8x + 4$

$$5 - 4 = 8x - 2x$$

$$1 = 6x$$

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

f) $7x - 3 = 4x + 2$

$$7x - 4x = 2 + 3$$

$$3x = 5$$

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