CBSE Class –VII Mathematics
NCERT Solutions
Simple Equations (Ex. 4.2)

Question 1. Give first the step you will use to separate the variable and then solve the equations:

(a) $x - 1 = 0$

(b) $x + 1 = 0$

(c) $x - 1 = 5$

(d) $x + 6 = 2$

(e) $y - 4 = -7$

(f) $y - 4 = 4$

(g) $y + 4 = 4$

(h) $y + 4 = -4$

Answer: (a) $x - 1 = 0 \Rightarrow x - 1 + 1 = 0 + 1$ [Adding 1 both sides]

$\Rightarrow x = 1$

(b) $x + 1 = 0 \Rightarrow x + 1 - 1 = 0 - 1$ [Subtracting 1 both sides]

$\Rightarrow x = -1$

(c) $x - 1 = 5 \Rightarrow x - 1 + 1 = 5 + 1$ [Adding 1 both sides]

$\Rightarrow x = 6$

(d) $x + 6 = 2 \Rightarrow x + 6 - 6 = 2 - 6$ [Subtracting 6 both sides]

$\Rightarrow x = -4$

(e) $y - 4 = -7 \Rightarrow y - 4 + 4 = -7 + 4$ [Adding 4 both sides]

$\Rightarrow y = -3$

(f) $y - 4 = 4 \Rightarrow y - 4 + 4 = 4 + 4$ [Adding 4 both sides]

$\Rightarrow y = 8$

(g) $y + 4 = 4 \Rightarrow y + 4 - 4 = 4 - 4$ [Subtracting 4 both sides]

$\Rightarrow y = 0$

(h) $y + 4 = -4 \Rightarrow y + 4 - 4 = -4 - 4$ [Subtracting 4 both sides]

$\Rightarrow y = -8$

Question 2. Give first the step you will use to separate the variable and then solve the equations

(a) $3l = 42$

(b) $\frac{b}{2} = 6$

(c) $\frac{p}{7} = 4$

(d) $4x = 25$

(e) $8y = 36$

(f) $\frac{z}{3} = \frac{5}{4}$

(g) $\frac{a}{5} = \frac{7}{15}$

(h) $20t = -10$

Answer: (a) $3l = 42 \Rightarrow \frac{3l}{3} = \frac{42}{3}$ [Dividing both sides by 3]

$\Rightarrow l = 14$

(b) $\frac{b}{2} = 6 \Rightarrow \frac{b}{2} \times 2 = 6 \times 2$ [Multiplying both sides by 2]

$\Rightarrow b = 12$

(c) $\frac{p}{7} = 4 \Rightarrow \frac{p}{7} \times 7 = 4 \times 7$ [Multiplying both sides by 7]

$\Rightarrow p = 28$

(d) $4x = 25 \Rightarrow \frac{4x}{4} = \frac{25}{4}$ [Dividing both sides by 4]

$\Rightarrow x = \frac{25}{4}$

(e) $8y = 36 \Rightarrow \frac{8y}{8} = \frac{36}{8}$ [Dividing both sides by 8]

$\Rightarrow y = \frac{9}{2}$

(f) $\frac{z}{3} = \frac{5}{4} \Rightarrow \frac{z}{3} \times 3 = \frac{5}{4} \times 3$ [Multiplying both sides by 3]

$\Rightarrow z = \frac{15}{4}$

(g) $\frac{a}{5} = \frac{7}{15} \Rightarrow \frac{a}{5} \times 5 = \frac{7}{15} \times 5$ [Multiplying both sides by 5]

$\Rightarrow a = \frac{7}{3}$

(h) $20t = -10 \Rightarrow \frac{20t}{20} = \frac{-10}{20}$ [Dividing both sides by 20]

$\Rightarrow t = \frac{-1}{2}$

Question 3. Give first the step you will use to separate the variable and then solve the equations

(a) $3n - 2 = 46$

(b) $5m + 7 = 17$

(c) $\frac{20p}{3} = 40$

(d) $\frac{3p}{10} = 6$

Answer: (a) $3n - 2 = 46$

Step I: $3n - 2 + 2 = 46 + 2 \Rightarrow 3n = 48$

[Adding 2 both sides]

Step II: $\frac{3n}{3} = \frac{48}{3} \Rightarrow n = 16$ [Dividing both sides by 3]

(b) $5m + 7 = 17$

Step I: $5m + 7 - 7 = 17 - 7 \Rightarrow 5m = 10$ [Subtracting 7 both sides]

Step II: $\frac{5m}{5} = \frac{10}{5} \Rightarrow m = 2$ [Dividing both sides by 5]

(c) $\frac{20p}{3} = 40$

Step I: $\frac{20p}{3} \times 3 = 40 \times 3 \Rightarrow 20p = 120$ [Multiplying both sides by 3]

Step II: $\frac{20p}{20} = \frac{120}{20} \Rightarrow p = 6$ [Dividing both sides by 20]

(d) $\frac{3p}{10} = 6$

Step I: $\frac{3p}{10} \times 10 = 6 \times 10 \Rightarrow 3p = 60$ [Multiplying both sides by 10]

Step II: $\frac{3p}{3} = \frac{60}{3} \Rightarrow p = 20$ [Dividing both sides by 3]

Question 4. Solve the following equation:

(a) $10p = 100$

(b) $10p + 10 = 100$

(c) $\frac{p}{4} = 5$

(d) $\frac{-p}{3} = 5$

(e) $\frac{3p}{4} = 6$

(f) $3s = -9$

(g) $3s + 12 = 0$

(h) $3s = 0$

(i) $2q = 6$

(j) $2q - 6 = 0$

(k) $2q + 6 = 0$

(l) $2q + 6 = 12$

Answer: (a) $10p = 100 \Rightarrow \frac{10p}{10} = \frac{100}{10}$ [Dividing both sides by 10]

$\Rightarrow p = 10$

(b) $10p + 10 = 100 \Rightarrow 10p + 10 - 10 = 100 - 10$ [Subtracting both sides 10]

$\Rightarrow 10p = 90 \Rightarrow \frac{10p}{10} = \frac{90}{10}$ [Dividing both sides by 10]

$\Rightarrow p = 9$

(c) $\frac{p}{4} = 5 \Rightarrow \frac{p}{4} \times 4 = 5 \times 4$ [Multiplying both sides by 4]

$\Rightarrow p = 20$

(d) $\frac{-p}{3} = 5 \Rightarrow \frac{-p}{3} \times (-3) = 5 \times (-3)$ [Multiplying both sides by – 3]

$\Rightarrow p = -15$

(e) $\frac{3p}{4} = 6 \Rightarrow \frac{3p}{4} \times 4 = 6 \times 4$ [Multiplying both sides by 4]

$\Rightarrow 3p = 24 \Rightarrow \frac{3p}{3} = \frac{24}{3}$ [Dividing both sides by 3]

$\Rightarrow p = 8$

(f) $3s = -9 \Rightarrow \frac{3s}{3} = \frac{-9}{3}$ [Dividing both sides by 3]

$\Rightarrow s = -3$

(g) $3s + 12 = 0 \Rightarrow 3s + 12 - 12 = 0 - 12$ [Subtracting both sides 10]

$\Rightarrow 3s = -12 \Rightarrow \frac{3s}{3} = \frac{-12}{3}$ [Dividing both sides by 3]

$\Rightarrow s = -4$

(h) $3s = 0 \Rightarrow \frac{3s}{3} = \frac{0}{3}$ [Dividing both sides by 3]

$\Rightarrow s = 0$

(i) $2q = 6 \Rightarrow \frac{2q}{2} = \frac{6}{2}$ [Dividing both sides by 2]

$\Rightarrow q = 3$

(j) $2q - 6 = 0 \Rightarrow 2q - 6 + 6 = 0 + 6$ [Adding both sides 6]

$\Rightarrow 2q = 6 \Rightarrow \frac{2q}{2} = \frac{6}{2}$ [Dividing both sides by 2]

$\Rightarrow q = 3$

(k) $2q + 6 = 0 \Rightarrow 2q + 6 - 6 = 0 - 6$ [Subtracting both sides 6]

$\Rightarrow 2q = -6 \Rightarrow \frac{2q}{2} = \frac{-6}{2}$ [Dividing both sides by 2]

$\Rightarrow q = -3$

(l) $2q + 6 = 12 \Rightarrow 2q + 6 - 6 = 12 - 6$ [Subtracting both sides 6]

$\Rightarrow 2q = 6 \Rightarrow \frac{2q}{2} = \frac{6}{2}$ [Dividing both sides by 2]

$\Rightarrow q = 3$