NCERT Solutions For Class 7 Maths Simple Equations Exercise 4.2

Q1. Give first the step you will use to separate the variable and then solve the equation:

(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)$y+4=-4$

Ans:

(a)$x-1=0$

Adding 1 to both sides of the given equation, we obtain

$x-1+1=0+1$

$x=1$

(b)$x+1=0$

Subtracting 1 from both sides of the given equation, we obtain

$x+1-1=0-1$

$x=-1$

(c)$x-1=5$

Adding 1 to both sides of the given equation, we obtain

$x-1+1=5+1$

$x=6$

(d)$x+6=2$

Subtracting 6 from both sides of the given equation, we obtain

$x+6-6=2-6$

$x=-4$

(e)$y - 4 = -7$

Adding 4 to both sides of the given equation, we obtain

$y - 4 + 4 = -7 + 4$

$y = -3$

(f)$y - 4 = 4$

Adding 4 to both sides of the given equation, we obtain

$y - 4 + 4 = 4 + 4$

$y = 8$

(g)$y + 4 = 4$

Subtracting 4 from both sides of the given equation, we obtain

$y + 4 - 4 = 4 - 4$

$y = 0$

(h)$y + 4 = -4$

Subtracting 4 from both sides of the given equation, we obtain

$y + 4 - 4 = -4 - 4$

$y = -8$

Q2. Give first the step you will use to separate the variable and then solve the equation:

(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) $20t = -10$

Ans:

(a) $3l = 42$

Dividing both sides of the given equation by 3, we obtain

$$\frac{3l}{3}=\frac{42}{3}$$

$l = 14$

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

Multiplying both sides of the given equation by 2, we obtain

$$\frac{b\times 2}{2}=6\times 2$$

$b = 12$

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

Multiplying both sides of the given equation by 7, we obtain

$$\frac{p\times 7}{7}=4\times 7$$

$p = 28$

(d) $4x = 25$

Dividing both sides of the given equation by 4, we obtain

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

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

(e) $8y= 36$

Dividing both sides of the given equation by 8, we obtain

$$\frac{8y}{8}=\frac{36}{8}$$

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

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

Multiplying both sides of the given equation by 3, we obtain

$$\frac{z\times 3}{3}=\frac{5\times 3}{4}$$

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

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

Multiplying both sides of the given equation by 5, we obtain

$$\frac{a\times 5}{5}=\frac{7\times 5}{15}$$

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

(h) $20t = -10$

Dividing both sides of the given equation by 20, we obtain

$$\frac{20t}{20} = \frac{-10}{20}$$

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

Q3. Give the steps you will use to separate the variable and then solve the equation:

(a) $3n - 2 = 46$ (b) $5m + 7 = 17$ (c) $\frac{20p}{3} = 40$

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

Ans:

(a) $3n - 2 = 46$

(b) $5m + 7 = 17$

Subtracting 7 from both sides of the given equation, we obtain

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

Adding 2 to both sides of the given equation, we obtain

$3n - 2 + 2 = 46 + 2$

$3n = 48$

Dividing both sides of the given equation by 3, we obtain

$$\frac{3n}{3}=\frac{48}{3}$$

$n = 16$

$5m + 7 - 7 = 17 - 7$

$5m = 10$

Dividing both sides of the given equation by 5, we obtain

$$\frac{5m}{5}=\frac{10}{5}$$
$$m = 2$$

Multiplying both sides of the given equation by 3, we obtain

$$\frac{20p \times 3}{3} = 40 \times 3$$
$$20p = 120$$

Dividing both sides of the given equation by 20, we obtain

$$\frac{20p}{20}=\frac{120}{20}$$
$$p = 6$$

Multiplying both sides of the given equation by 10, we obtain

$$\frac{3p \times 10}{10} = 6 \times 10$$
$$3p = 60$$

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

Dividing both sides of the given equation by 3, we obtain

$$\frac{3p}{3} = \frac{60}{3}$$

$p = 20$

Q4. Solve the following equations:

(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) $2q + 6 = 12$

Ans:

(a) $10p = 100$

$$\frac{10p}{10} = \frac{100}{10}$$
$$p = 10$$

(b) $10p + 10 = 100$

$10p + 10 - 10 = 100 - 10$

$10p = 90$

$$\frac{10p}{10} = \frac{90}{10}$$
$$p = 9$$

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

$$\frac{p\times 4}{4}=5\times 4$$
$$p=20$$

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

$$\frac{-p\times(-3)}{3}=5\times(-3)$$
$$p=-15$$

(e)

$$\frac{3p}{4}=6$$
$$\frac{3p\times 4}{4}=6\times 4$$
$$3p=24$$
$$\frac{3p}{3}=\frac{24}{3}$$
$$p=8$$

(f) $3s = -9$

$$\frac{3s}{3}=\frac{-9}{3}$$
$$s=-3$$

(g) $3s + 12 = 0$

$3s + 12 - 12 = 0 - 12$

$3s = -12$

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

(h) $3s = 0$

$$\frac{3s}{3} = \frac{0}{3}$$
$$s = 0$$

(i) $2q = 6$

$$\frac{2q}{2} = \frac{6}{2}$$
$$q = 3$$

(j) $2q - 6 = 0$

$2q - 6 + 6 = 0 + 6$

$2q = 6$

$$\frac{2q}{2} = \frac{6}{2}$$
$$q = 3$$

(k) $2q + 6 = 0$

$2q + 6 - 6 = 0 - 6$

$2q = -6$

$$\frac{2q}{2} = \frac{-6}{2}$$
$$q = -3$$

(l) $2q + 6 = 12$

$2q + 6 - 6 = 12 - 6$

$2q = 6$

$$\frac{2q}{2} = \frac{6}{2}$$
$$q = 3$$

********** END **********