NCERT Solutions For Class 7 Maths Simple Equations Exercise 4.3

Q1. Solve the following equations.

(a) $2y+\frac{5}{2}=\frac{37}{2}$ (b) $5t+ 28 = 10$ (c) $\frac{a}{5}+3=2$

(d) $\frac{q}{4}+7=5$ (e) $\frac{5}{2}x=-10$ (f) $\frac{5}{2}x=\frac{25}{4}$

(g) $7m+\frac{19}{2}=13$ (h) $6z+ 10 = - 2$ (i) $\frac{3l}{2}=\frac{2}{3}$

(j) $\frac{2b}{3}-5=3$

Ans:

(a) $2y+\frac{5}{2}=\frac{37}{2}$

$2y=\frac{37}{2}-\frac{5}{2}=\frac{32}{2}=16$ (Transposing $\frac{5}{2}$ to R.H.S.)

Dividing both sides by 2,

$y=\frac{16}{2}=8$

(b) $5t+ 28 = 10$

$5t= 10 - 28 = - 18$ (Transposing 28 to R.H.S.)

Dividing both sides by 5,

$t=\frac{-18}{5}$

(c) $\frac{a}{5}+3=2$

$\frac{a}{5} = 2 - 3 = -1$ (Transposing 3 to R.H.S.)

Multiplying both sides by 5,

$a = -1 \times 5 = -5$

(d) $\frac{q}{4} + 7 = 5$

$\frac{q}{4} = -2$ (Transposing 7 to R.H.S.)

Multiplying both sides by 4,

$q = -8$

(e) $\frac{5}{2}x = -10$

Multiplying both sides by 2,

$5x = -10 \times 2 = -20$

Dividing both sides by 5,

$x = \frac{-20}{5} = -4$

(f) $\frac{5}{2}x = \frac{25}{4}$

Multiplying both sides by 2,

$5x = \frac{25}{4} \times 2 = \frac{25}{2}$

Dividing both sides by 5,

$x = \frac{25}{2} \times \frac{1}{5} = \frac{5}{2}$

(g) $7m+\frac{19}{2}=13$

$7m=13-\frac{19}{2}=\frac{26-19}{2}$ (Transposing $\frac{19}{2}$ to R.H.S.)

$7m=\frac{7}{2}$

Dividing both sides by 7,

$m=\frac{1}{2}$

(h) $6z+10=-2$

$6z=-2-10=-12$ (Transposing 10 to R.H.S.)

Dividing both sides by 6,

$z=\frac{-12}{6}=-2$

(i) $\frac{3l}{2}=\frac{2}{3}$

Multiplying both sides by 2,

$3l=\frac{2}{3}\times 2=\frac{4}{3}$

Dividing both sides by 3,

$l=\frac{4}{3}\times\frac{1}{3}=\frac{4}{9}$

(j) $\frac{2b}{3}-5=3$

$\frac{2b}{3} = 3 + 5 = 8$ (Transposing - 5 to R.H.S.)

Multiplying both sides by 3,

$2b = 8 \times 3 = 24$

Dividing both sides by 2,

$b = \frac{24}{2} = 12$

Q2. Solve the following equations.

(a) $2(x + 4) = 12$ (b) $3(n - 5) = 21$

(c) $3(n - 5) = -21$ (d) $-4(2 + x) = 8$

(e) $4(2 - x) = 8$

Ans:

(a) $2(x + 4) = 12$

Dividing both sides by 2,

$x + 4 = \frac{12}{2} = 6$

$x = 6 - 4 = 2$ (Transposing 4 to R.H.S.)

(b) $3(n - 5) = 21$

Dividing both sides by 3,

$n - 5 = \frac{21}{3} = 7$

$n = 7 + 5 = 12$ (Transposing - 5 to R.H.S.)

(c) $3(n - 5) = -21$

Dividing both sides by 3,

$$n-5=\frac{-21}{3}=-7$$

n= - 7 + 5 = - 2 (Transposing - 5 to R.H.S.)

(d) - 4 (2 +x) = 8

Dividing both sides by - 4,

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

x= - 2 - 2 = - 4 (Transposing 2 to R.H.S.)

(e) 4 (2 -x) = 8

Dividing both sides by 4,

2 -x= 2

-x= 2 - 2 (Transposing 2 to R.H.S.)

-x= 0

x= 0

Q3. Solve the following equations.

(a) 4 = 5 (p- 2) (b) - 4 = 5 (p- 2)

(c) 16 = 4 + 3 (t+ 2) (d) 4 + 5 (p- 1) = 34

(e) 0 = 16 + 4 (m- 6)

Ans:

(a) 4 = 5 (p- 2)

Dividing both sides by 5,

$$\frac{4}{5} = p - 2$$

$$\frac{4}{5} + 2 = p \qquad \text{(Transposing } -2 \text{ to L.H.S.)}$$

$$\frac{4+10}{5} = p$$

$$\frac{14}{5} = p$$

(b) $-4 = 5(p - 2)$

Dividing both sides by 5,

$$-\frac{4}{5} = p - 2$$

$$-\frac{4}{5} + 2 = p \qquad \text{(Transposing } -2 \text{ to L.H.S.)}$$

$$\frac{-4+10}{5} = p$$

$$\frac{6}{5} = p$$

(c) $16 = 4 + 3(t + 2)$

$16 - 4 = 3(t + 2)$ (Transposing 4 to L.H.S.)

$12 = 3(t + 2)$

Dividing both sides by 3,

$$\frac{12}{3} = t + 2$$

$4 = t + 2$

$4 - 2 = t$ (Transposing 2 to L.H.S.)

$2 = t$

(d) $4 + 5(p - 1) = 34$

$5(p - 1) = 34 - 4 = 30$ (Transposing 4 to R.H.S.)

Dividing both sides by 5,

$$p - 1 = \frac{30}{5} = 6$$

$p = 6 + 1 = 7$ (Transposing - 1 to R.H.S.)

(e) $0 = 16 + 4(m - 6)$

$0 = 16 + 4m - 24$

$0 = -8 + 4m$

$4m = 8$ (Transposing - 8 to L.H.S)

Dividing both sides by 4,

$m = 2$

Q4. (a) Construct 3 equations starting with $x = 2$

(b) Construct 3 equations starting with $x = -2$

Ans:

(a)$x = 2$

Multiplying both sides by 5,

$5x = 10$ (i)

Subtracting 3 from both sides,

$5x - 3 = 10 - 3$

$5x - 3 = 7$ (ii)

Dividing both sides by 2,

$$\frac{5x}{2} - \frac{3}{2} = \frac{7}{2} \quad \text{(iii)}$$

(b)$x = -2$

Subtracting 2 from both sides,

$x - 2 = -2 - 2$

$x - 2 = -4$ (i)

Again,$x = -2$

Multiplying by 6,

$6 \times x = -2 \times 6$

$6x = -12$

Subtracting 12 from both sides,

$6x - 12 = -12 - 12$

$6x - 12 = -24$ (ii)

Adding 24 to both sides,

$6x - 12 + 24 = -24 + 24$

$6x + 12 = 0$ (iii)

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