

ch-22
(Simple (Linear) Equations)

22(A) Exercise

1. Solve:

i) $x + 2 = 6$

$= x + 2 - 2 = 6 - 2$

$= x = 4$

(vii) $p + 4.6 = 8.5$

$p + 4.6 - 4.6 = 8.5 - 4.6$

$p = 3.9$

ii) $x + 6 = 2$

$= x + 6 - 6 = 2 - 6$

$= x = -4$

(viii) $y + 3.2 = -6.5$

$y + 3.2 - 3.2 = -6.5 - 3.2$

$y = -9.7$

iii) $y + 8 = 5$

$= y + 8 - 8 = 5 - 8$

$y = -3$

(ix) $a + 8.9 = -12.6$

$= a + 8.9 - 8.9 = -12.6 - 8.9$

$a = -21.5$

iv) $x + 4 = -3$

$= x + 4 - 4 = -3 - 4$

$x = -7$

(x) $x + \frac{1}{3} = 5$

$= x + \frac{1}{3} - \frac{1}{3} = 5 - \frac{1}{3}$

$= x + \frac{7}{3} = 5$

$= x + \frac{7}{3} - \frac{7}{3} = 5 - \frac{7}{3}$

$= x = \frac{5-7}{3} = \frac{15-7}{3} = \frac{8}{3} = 2\frac{2}{3}$

v) $y + 2 = -8$

$= y + 2 - 2 = -8 - 2$

$y = -10$

vi) $b + 2.5 = 4.2$

$= b + 2.5 - 2.5 = 4.2 - 2.5$

$b = 1.7$

$$\text{xi) } z + 2 = 4\frac{1}{5}$$

$$= z + 2 = \frac{21}{5}$$

$$= z + 2 - 2 = \frac{21}{5} - 2$$

$$= z = \frac{21-10}{5} = \frac{11}{5}$$

$$\text{xii) } m + 3\frac{1}{2} = 4\frac{1}{4}$$

$$= m + 3\frac{1}{2} - 3\frac{1}{2} = 4\frac{1}{4} - 3\frac{1}{2}$$

$$= m = \frac{17}{4} - \frac{7}{2}$$

$$= m = \frac{17-14}{4} = \frac{3}{4}$$

$$\text{xiii) } x + 2 = 1\frac{1}{4}$$

$$= x + 2 - 2 = 1\frac{1}{4} - 2$$

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

$$x = \frac{5-8}{4} = \frac{-3}{4}$$

$$\text{(xiv) } y + 5\frac{1}{3} = 4$$

$$= y + 5\frac{1}{3} - 5\frac{1}{3} = 4 - 5\frac{1}{3}$$

$$= y = 4 - \frac{16}{3}$$

$$y = \frac{12-16}{3} = \frac{-4}{3}$$

$$\begin{aligned}
 \text{xv)} \quad a + 3\frac{1}{5} &= 1\frac{1}{2} \\
 &= a + \cancel{3\frac{1}{5}} - \cancel{3\frac{1}{5}} = 1\frac{1}{2} - 3\frac{1}{5} \\
 &= a = 1\frac{1}{2} - 3\frac{1}{5} \\
 &= a = \frac{3}{2} - \frac{16}{5} = \frac{15 - 32}{10} \\
 &= a = \frac{17}{10} = 1\frac{7}{10}
 \end{aligned}$$

2- Solve

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

$$\begin{aligned}
 \text{(ii)} \quad m - 2 &= -5 \\
 m &= -5 + 2 = -3
 \end{aligned}$$

$$\begin{aligned}
 \text{(iii)} \quad b - 5 &= 7 \\
 &= b = 7 + 5 = 12
 \end{aligned}$$

$$\begin{aligned}
 \text{iv)} \quad a - 2.5 &= -4 \\
 &= a = -4 + 2.5 \\
 &= a = -1.5
 \end{aligned}$$

$$\begin{aligned}
 \text{(v)} \quad y - 3\frac{1}{2} &= 6 \\
 &= y = 6 + \frac{7}{2} = \frac{12 + 7}{2} \\
 &= y = \frac{19}{2} = 9\frac{1}{2}
 \end{aligned}$$

$$\begin{aligned}
 \text{vi)} \quad \cancel{z - 2} + \frac{7}{3} \quad z - 2\frac{1}{3} &= -6 \\
 &= z = -6 + \frac{7}{3} \\
 &= z = \frac{-18 + 7}{3} \\
 &= \frac{-11}{3}
 \end{aligned}$$

$$\begin{aligned} \text{vii) } p - 5.4 &= 2.7 \\ &= p = 2.7 + 5.4 \\ &= p = 8.1 \end{aligned}$$

$$\begin{aligned} \text{viii) } x - 1.5 &= -4.9 \\ &= x = -4.9 + 1.5 \\ &= x = -3.4 \end{aligned}$$

$$\begin{aligned} \text{ix) } n - 4 &= -4\frac{1}{5} \\ &= n = -4\frac{1}{5} + 4 \\ &= n = \frac{-21 + 20}{5} = \frac{-1}{5} \end{aligned}$$

3. Solve :

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

$$\begin{aligned} \text{ii) } 2y &= 9 \\ &= y = \frac{9}{2} = 4.5 \end{aligned}$$

$$\begin{aligned} \text{iii) } 5z &= 8.5 \\ &= z = \frac{8.5}{5} = 1.7 \end{aligned}$$

$$\begin{aligned} \text{iv) } 2.5m &= 7.5 \\ &= m = \frac{7.5}{2.5} = 3 \end{aligned}$$

$$\begin{aligned} \text{v) } 3.2p &= 16 \\ &= p = \frac{16}{3.2} = 5 \end{aligned}$$

$$\begin{aligned} \text{vi) } 2a &= 4.6 \\ &= a = \frac{4.6}{2} = 2.3 \end{aligned}$$

4. Solve

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

$$\begin{aligned} \text{(ii) } \frac{y}{3} &= -2 \\ &= y = -2 \times 3 = -6 \end{aligned}$$

$$\begin{aligned} \text{(iii) } \frac{a}{5} &= -15 \\ &= a = -15 \times 5 = -75 \end{aligned}$$

$$\begin{aligned} \text{iv) } \frac{z}{4} &= 3\frac{1}{4} \\ &= z = 13 \times 4 \\ &= z = \frac{13^H}{4} \times 4 = 13 \end{aligned}$$

$$\begin{aligned} \text{(v) } \frac{m}{6} &= 2\frac{1}{2} \\ &= m = \frac{5}{2} \times 6 = 15 \end{aligned}$$

$$\begin{aligned} \text{(vi) } \frac{n}{7} &= -2.8 \\ &= n = -2.8 \times 7 = -19.6 \end{aligned}$$

5- Solve

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

$$\begin{aligned} \text{ii)} -3.5y &= 14 \\ y &= \frac{14}{-3.5} = -4 \end{aligned}$$

$$\begin{aligned} \text{iii)} -5z &= 4 \\ z &= \frac{4}{-5} \end{aligned}$$

$$\text{iv)} -5 = a + 3$$

$$\text{v)} 2 = p + 5$$

$$\text{vi)} 4.5 = m - 2.7$$

~~$$\begin{aligned} &= 5 + 3 = a \\ &= -2 = a \\ &= -5 - 3 = a \\ &= -8 = a \end{aligned}$$~~

$$\begin{aligned} 2 - 5 &= p \\ -3 &= p \end{aligned}$$

$$\begin{aligned} m - 2.7 &= 4.5 \\ m &= 4.5 + 2.7 \\ m &= 7.2 \end{aligned}$$

$$\text{vii)} 3\frac{2}{5} = x - 2\frac{1}{3}$$

$$\begin{aligned} \text{viii)} 5 &= m + 3\frac{4}{7} \\ m + 3\frac{4}{7} &= 5 \end{aligned}$$

$$= x - 2\frac{1}{3} = 3\frac{2}{5}$$

$$m = 5 - 3\frac{4}{7}$$

$$= x = 3\frac{2}{5} + 2\frac{1}{3}$$

$$m = 5 - \frac{25}{7}$$

$$= x = \frac{17}{5} + \frac{7}{3} = \frac{51 + 35}{15} =$$

$$m = \frac{35 - 25}{7} = \frac{10}{7}$$

$$= x = \frac{86}{15} = 5\frac{11}{15}$$

$$m = 1\frac{3}{7}$$

$$\text{ix)} -2\frac{1}{5} = y - 4$$

$$= y - 4 = -2\frac{1}{5}$$

$$= y = -\frac{11}{5} + 4$$

$$= y = \frac{-11 + 20}{5} = \frac{9}{5} = 1\frac{4}{5}$$