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Simple (Linear) Equations (ch-22)

(Including Word Problems)

Exercise - 22(A).

Solve:

1) i) $x+2=6$
$\Rightarrow x=6-2=4$

ii) $x+6=2$
$\Rightarrow x=2-6=-4$

iii) $y+8=5$
$\Rightarrow y=5-8=-3$

iv) $x+4=-3$

v) $y+2=-8$
$\Rightarrow y=-8-2=-10$

vi) $b+2.5=4.2$
$\Rightarrow b=4.2-2.5=1.7$

vii) $P+4.6=8.5$
$\Rightarrow P=8.5-4.6=3.9$

viii) $y+3.2=-6.5$
$\Rightarrow y=-6.5-3.2=-9.7$

ix) $a+8.9=-12.6$
$\Rightarrow a=-12.6-8.9=9-21.5$

x) $x+2\frac{1}{3}=5$
$\Rightarrow x+\frac{7}{3}=5$
$\Rightarrow x=5-\frac{7}{3}=\frac{8}{3}=\frac{15-7}{3}=8/3$

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

$\Rightarrow 2 = 4\frac{1}{5} - 2 = \frac{21}{5} - 2 = \frac{21-10}{5} = \frac{11}{5} = 2\frac{1}{5}$

xii) $m + 3\frac{1}{2} = 4\frac{1}{4}$.0.

$\Rightarrow m = 4\frac{1}{4} - 3\frac{1}{2} = \frac{17}{4} - \frac{7}{2} = \frac{17-14}{4} = \frac{3}{4}$

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

$\Rightarrow x+2 = \frac{5}{4} \Rightarrow x = \frac{5}{4} - 2 = \frac{5-8}{4} = \frac{-3}{4}$

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

$\Rightarrow y = 4 - 5\frac{1}{3} = 4 - \frac{16}{3} = \frac{17-16}{3} = -\frac{4}{3} = -1\frac{1}{3}$

xv) $a + 3\frac{1}{5} = 1\frac{1}{2}$

$\Rightarrow a = 1\frac{1}{2} - 3\frac{1}{5} = \frac{3}{2} - \frac{16}{5} = \frac{15-32}{10} = \frac{-17}{10} = -1\frac{7}{10}$

2. Solve:

i) $x - 3 = 2$

$\Rightarrow x = 3 + 2 = 5$

ii) $m - 2 = -5$

$\Rightarrow m = -5 + 2$

$\Rightarrow m = -3$

iii) $b - 5 = 7$

$\Rightarrow b = 7 + 5$

$\Rightarrow b = 12$

iv) $a - 2.5 = -4$

$\Rightarrow a = -4 + 2.5$

$\Rightarrow a = -1.5$

v) $y - 3\frac{1}{2} = 6$

$\Rightarrow y = 6 + 3\frac{1}{2}$

$\Rightarrow y = 6 + \frac{7}{2}$

$\Rightarrow y = \frac{12+7}{2} = \frac{19}{2}$

$y = 9\frac{1}{2}$

vi) $z - 2\frac{1}{3} = 6$

$\Rightarrow z = 6 + 2\frac{1}{3} = 6 + \frac{7}{3}$

$\Rightarrow z = \frac{18+7}{3} = \frac{25}{3}$

$\Rightarrow 8\frac{1}{3}$

vii) $P - 5.4 = 2.7$

$\Rightarrow P = 2.7 + 5.4 = 8.1$

viii) $x - 1.5 = -4.9$

$\Rightarrow x = -4.9 + 1.5 = -3.4$

ix) $n - 4 = -4\frac{1}{5}$

$\Rightarrow n = -4\frac{1}{5} + 4 = \frac{-21}{5} + 4 = \frac{-21+20}{5} = \frac{-1}{5}$

Solve: 3) i) $3x = 12$

$\Rightarrow x = \frac{12}{3} = 4$

ii) $2y = 9$

$\Rightarrow y = \frac{9}{2} = 4\frac{1}{2} = 4.5$

iii) $5z = 8.5$

$\Rightarrow z = \frac{8.5}{5} = 1.7$

iv) $2.5m = 7.5$

$\Rightarrow m = \frac{7.5}{2.5} = 3$

v) $3.2p = 16$

$\Rightarrow p = \frac{16}{3.2} = \frac{16}{\frac{32}{10}} = \frac{16 \times 10}{32} = 5$

vi) $2a = 4.6$

$\Rightarrow a = \frac{4.6}{2} = 2.3$

Solve:

4. i) $\frac{x}{2} = 5$

$\Rightarrow x = 5 \times 2 = 10$

ii) $\frac{y}{3} = -2$

$\Rightarrow y = -2 \times 3 = -6$

$\therefore y = -6$

iii) $\frac{a}{5} = -15$

$\Rightarrow a = -15 \times 5$

$\Rightarrow a = -75$

iv) $\frac{z}{4} = 3\frac{1}{4}$

$\Rightarrow z = 3\frac{1}{4} \times 4$

$\Rightarrow z = \frac{13}{4} \times 4$

$\Rightarrow z = 13$

v) $\frac{m}{6} = 2\frac{1}{2}$

$\Rightarrow m = 2\frac{1}{2} \times 6$

$\Rightarrow m = \frac{5}{2} \times 6^{3}$

$\Rightarrow m = 5 \times 3 = 15$

vi) $\frac{n}{7} = -2.8$

$\Rightarrow n = -2.8 \times 7$

$\Rightarrow n = -19.6$

5) Solve:

i) $-2x = 8$

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

$\Rightarrow x = -4$

ii) $-3.5y = 14$

$\Rightarrow y = \frac{14}{-3.5}$

$\Rightarrow y = \frac{14}{-3.5} = \frac{14}{-\frac{35}{10}} = 14 \times \frac{2}{-35} = -4$

iii) $-5z = 4$

$\Rightarrow z = \frac{4}{-5}$

$\Rightarrow z = -\frac{4}{5}$

iv) $-5 = a + 3$

$\Rightarrow a + 3 = -5$

$\Rightarrow a = -5 - 3 = -8$

v) $2 = p + 5$

$\Rightarrow p = 2 - 5 = -3$

vi) $4.5 = m - 2.7$

$\Rightarrow m = 2.7 + 4.5 = 7.2$

vi) $4.5 = m - 2.7$

$\Rightarrow m = 2.7 + 4.5 = 7.2$

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

$\Rightarrow x = 3\frac{2}{5} + 2\frac{1}{3} = \frac{17}{5} + \frac{7}{3} = \frac{51+35}{15} = \frac{86}{15} = 5\frac{11}{15}$

viii) $5 = m + 3\frac{4}{7}$

$\Rightarrow m = 5 - 3\frac{4}{7} = 5 - \frac{25}{7} = \frac{35-25}{7} = \frac{10}{7} = 1\frac{3}{7}$

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

$\Rightarrow y = 4 - 2\frac{1}{5} = 4 - \frac{11}{5} = \frac{20-11}{5} = \frac{9}{5} = 1\frac{4}{5}$