

RD SHARMA

Solutions

Class 7 Maths

Chapter 1

Ex 1.4

Simplify each of the following:

(i) $3 - (5 - 6 \div 3)$

Solution:

$$3 - (5 - 6 \div 3)$$

$$= 3 - (5 - 2)$$

$$= 3 - 3$$

$$= 0$$

$$\therefore 3 - (5 - 6 \div 3) = 0$$

(ii) $-25 + 14 \div (5 - 3)$

Solution:

$$-25 + 14 \div (5 - 3) = -25 + 14 \div (2)$$

$$= -25 + \frac{14}{2}$$

$$= -25 + 7$$

$$= -18$$

$$\therefore -25 + 14 \div (5 - 3) = -18$$

(iii) $25 - \frac{1}{2}(5 + 4 - (3 + 2 - \overline{1 + 3}))$

Solution:

$$25 - \frac{1}{2}[5 + 4 - (3 + 2 - \overline{1 + 3})]$$

$$= 25 - \frac{1}{2}[5 + 4 - (5 - 4)]$$

$$= 25 - \frac{1}{2}[5 + 4 - 1]$$

$$= 25 - \frac{1}{2}[8]$$

$$= 25 - 4$$

$$= 21$$

$$\therefore 25 - \frac{1}{2}(5 + 4 - (3 + 2 - \overline{1 + 3})) = 21$$

(iv) $27 - [38 - (46 - (15 - \overline{13 - 2}))]$

Solution:

$$27 - [38 - (46 - (15 - \overline{13 - 2}))]$$

$$= 27 - [38 - (46 - (15 - 11))]$$

$$= 27 - [38 - (46 - 4)]$$

$$= 27 - [38 - 42]$$

$$= 27 - [-4]$$

$$= 27 + 4$$

$$= 31$$

$$\therefore 27 - [38 - (46 - (15 - \overline{13 - 2}))] = 31$$

(v) $36 - [18 - (14 - (15 - 4 \div 2 \times 2))]$

Solution:

$$36 - [18 - (14 - (15 - 4 \div 2 \times 2))]$$

$$= 36 - [18 - (14 - (11 \div 2 \times 2))]$$

$$= 36 - [18 - (14 - \frac{11}{2} \times 2)]$$

$$\begin{aligned}
&= 36 - [18 - (14 - 11)] \\
&= 36 - [18 - 3] \\
&= 36 - 15 \\
&= 21 \\
\therefore 36 - [18 - (14 - (15 - 4 \div 2 \times 2))] &= 21
\end{aligned}$$

$$(vi) 45 - [38 - (60 \div 3 - (6 - 9 \div 3) \div 3)]$$

Solution:

$$\begin{aligned}
&45 - [38 - (60 \div 3 - (6 - 9 \div 3) \div 3)] \\
&= 45 - [38 - (20 - (6 - 3) \div 3)] \\
&= 45 - [38 - (20 - 3 \div 3)] \\
&= 45 - [38 - (20 - 1)] \\
&= 45 - [38 - 19] \\
&= 45 - [19] \\
&= 26 \\
\therefore 45 - [38 - (60 \div 3 - (6 - 9 \div 3) \div 3)] &= 26
\end{aligned}$$

$$(vii) 23 - [23 - (23 - (23 - \overline{23 - 23}))]$$

Solution:

$$\begin{aligned}
&23 - [23 - (23 - (23 - \overline{23 - 23}))] \\
&= 23 - [23 - (23 - (23 - 0))] \\
&= 23 - [23 - (23 - 23)] \\
&= 23 - [23 - 0] \\
&= 23 - 23 \\
&= 0 \\
\therefore 23 - [23 - (23 - (23 - \overline{23 - 23}))] &= 0
\end{aligned}$$

$$(viii) 2550 - [510 - (270 - (90 - \overline{80 + 70}))]$$

Solution:

$$\begin{aligned}
&2550 - [510 - (270 - (90 - \overline{80 + 70}))] \\
&= 2550 - [510 - (270 - (90 - 150))] \\
&= 2550 - [510 - (270 - (-60))] \\
&= 2550 - [510 - 330] \\
&= 2550 - [180] \\
&= 2550 - 180 \\
&= 2370 \\
\therefore 2550 - [510 - (270 - (90 - \overline{80 + 70}))] &= 2370
\end{aligned}$$

$$(ix) 4 + \frac{1}{5}[(-10 \times (25 - \overline{13 - 3})) \div (-5)]$$

Solution:

$$\begin{aligned}
&4 + \frac{1}{5}[(-10 \times (25 - \overline{13 - 3})) \div (-5)] \\
&= 4 + \frac{1}{5}[(-10 \times (25 - 10)) \div (-5)] \\
&= 4 + \frac{1}{5}[(-10 \times (15)) \div (-5)] \\
&= 4 + \frac{1}{5}[(-150) \div (-5)]
\end{aligned}$$

$$= 4 + \frac{1}{5}[30]$$

$$= 4 + 6$$

$$= 10$$

$$\therefore 4 + \frac{1}{5}[(-10 \times (25 - 13 - 3)) \div (-5)] = 10$$

$$(x) 22 - \frac{1}{4}(-5 - (-48) \div (-16))$$

Solution:

$$22 - \frac{1}{4}(-5 - (-48) \div (-16))$$

$$= 22 - \frac{1}{4}(-5 - (\frac{-48}{-16}))$$

$$= 22 - \frac{1}{4}(-5 - \frac{48}{16})$$

$$= 22 - \frac{1}{4}(-5 - 3)$$

$$= 22 - \frac{1}{4}(-8)$$

$$= 22 + \frac{8}{4}$$

$$= 22 + 2$$

$$= 24$$

$$\therefore 22 - \frac{1}{4}(-5 - (-48) \div (-16)) = 24$$

$$(xi) 63 - [(-3)(-2 - \overline{8 - 3})] \div [3(5 + (-2)(-1))]$$

Solution:

$$63 - [(-3)(-2 - \overline{8 - 3})] \div [3(5 + (-2)(-1))]$$

$$= 63 - [(-3)(-2 - 5)] \div [3(5 + 2)]$$

$$= 63 - [(-3)(-7)] \div [3(7)]$$

$$= 63 - [21] \div [21]$$

$$= 63 - 1$$

$$= 62$$

$$\therefore 63 - [(-3)(-2 - \overline{8 - 3})] \div [3(5 + (-2)(-1))] = 62$$

$$(xii) [29 - (-2)(6 - (7 - 3))] \div [3 \times (5 + (-3) \times (-2))]$$

Solution:

$$[29 - (-2)(6 - (7 - 3))] \div [3 \times (5 + (-3) \times (-2))]$$

$$= [29 - (-2)(6 - 4)] \div [3 \times (5 + (3 \times 2))]$$

$$= [29 - (-2)(2)] \div [3 \times (5 + 6)]$$

$$= [29 + 4] \div [3 \times 11]$$

$$= [33] \div [33]$$

$$= 1$$

$$\therefore [29 - (-2)(6 - (7 - 3))] \div [3 \times (5 + (-3) \times (-2))] = 1$$

Q13) Using brackets, write a mathematical expression for each of the following:

(i) Nine multiplied by the sum of two and five.

(ii) Twelve divided by the sum of one and three.

(iii) Twenty divided by the difference of seven and two.

(iv) Eight subtracted from the product of two and three.

(v) *Forty divided by one more than the sum of nine and ten.*

(vi) *Two multiplied by one less than the difference of nineteen and six.*

Solution:

(i) $9(2 + 5)$

(ii) $12 \div (1 + 3)$

(iii) $20 \div (7 - 2)$

(iv) $2 \times 3 - 8$

(v) $40 \div [1 + (9 + 10)]$

(vi) $2 \times [(19 - 6) - 1]$