

TEXT BOOK EXERCISE 1.3

Q. 1. Solve the following :

$$(i) \frac{7}{11} \times \frac{5}{4} \quad (ii) \frac{5}{7} \times \left(\frac{-3}{4}\right)$$

$$(iii) \frac{2}{9} \times \frac{-5}{11} \quad (iv) \frac{-3}{5} \times \frac{4}{7}$$

$$(v) \left(\frac{-8}{7}\right) \times \left(\frac{-14}{5}\right) \quad (vi) \left(\frac{-5}{9}\right) \times \left(\frac{36}{-25}\right)$$

$$(vii) \left(\frac{-8}{25}\right) \times \left(\frac{-15}{16}\right) \quad (viii) \left(\frac{-6}{11}\right) \times \left(\frac{-44}{30}\right)$$

$$(ix) \frac{5}{17} \times \left(\frac{-51}{30}\right)$$

$$(x) \left(\frac{-7}{18}\right) \times \left(\frac{15}{-7}\right)$$

$$(xi) \left(\frac{-16}{5}\right) \times \frac{20}{9} \times \left(\frac{-3}{4}\right)$$

$$(xii) \frac{9}{10} \times \left(\frac{-15}{27}\right) \times \frac{18}{5}$$

Solution.

$$(i) \frac{7}{11} \times \frac{5}{4} = \frac{7 \times 5}{11 \times 4} = \frac{35}{44} \text{ Ans.}$$

$$(ii) \frac{5}{7} \times \left(\frac{-3}{4}\right) = \frac{5 \times (-3)}{7 \times 4} = \frac{-15}{28} \text{ Ans.}$$

$$(iii) \frac{2}{9} \times \frac{-5}{11} = \frac{2 \times -5}{9 \times 11} = \frac{-10}{99} \text{ Ans.}$$

$$(iv) \frac{-3}{5} \times \frac{4}{7} = \frac{-3 \times 4}{5 \times 7} = \frac{-12}{35} \text{ Ans.}$$

$$(v) \left(\frac{-8}{7}\right) \times \left(\frac{-14}{5}\right) = \frac{(-8) \times (-14)^2}{7 \times 5}$$
$$= \frac{8 \times 2}{5} = \frac{16}{5} \text{ Ans.}$$

$$(vi) \left(\frac{-5}{9}\right) \times \left(\frac{36}{-25}\right) = \left(\frac{1}{\cancel{9}}\right) \times \left(\frac{4}{\cancel{25}}\right)$$
$$= \frac{4}{5} \text{ Ans.}$$

$$(vii) \left(\frac{-8}{25}\right) \times \left(\frac{-15}{16}\right) = \frac{\overset{1}{\cancel{8}} \times \overset{3}{\cancel{15}}}{\underset{5}{25} \times \underset{2}{\cancel{16}}}$$

$$= \frac{3}{10} \text{ Ans.}$$

$$(viii) \left(\frac{-6}{11}\right) \times \left(\frac{-44}{30}\right) = \frac{\overset{1}{\cancel{6}} \times \overset{4}{\cancel{44}}}{\underset{1}{11} \times \underset{5}{\cancel{30}}}$$

$$= \frac{4}{5} \text{ Ans.}$$

$$(ix) \frac{5}{17} \times \left(\frac{-51}{30}\right) = \frac{\overset{1}{\cancel{5}} \times \overset{3}{\cancel{51}}}{\underset{1}{17} \times \underset{2}{\cancel{30}}}$$

$$= \frac{-1}{2} \text{ Ans.}$$

$$(x) \left(\frac{-7}{18}\right) \times \left(\frac{15}{-7}\right) = \frac{\overset{1}{\cancel{7}} \times \overset{5}{\cancel{15}}}{\underset{6}{18} \times \overset{1}{\cancel{7}}}$$

$$= \frac{5}{6} \text{ Ans.}$$

$$(xi) \left(\frac{-16}{5}\right) \times \frac{20}{9} \times \left(\frac{-3}{4}\right)$$

$$= \frac{\overset{4}{\cancel{-16}} \times \overset{2}{\cancel{20}}}{\underset{1}{5} \times 9} \times \left(\frac{-3}{\underset{3}{4}}\right) = \frac{\overset{16}{\cancel{-64}}}{\underset{3}{9}} \times \frac{\overset{1}{\cancel{-3}}}{\underset{1}{4}}$$

$$= \frac{16}{3} \text{ Ans.}$$

$$(xii) \frac{9}{10} \times \left(\frac{-15}{27}\right) \times \frac{18}{5}$$

$$= \frac{9}{10} \times \frac{\overset{3}{\cancel{-15}} \times \overset{2}{\cancel{18}}}{\underset{3}{27} \times \underset{1}{\cancel{9}}} = \frac{9 \times \overset{1}{\cancel{-2}}}{\underset{5}{10}}$$

$$= \frac{-9}{5} \text{ Ans.}$$

Q. 2. Verify that $x \times y = y \times x$ for the following when :

$$(i) x = \frac{-5}{7}, y = \frac{9}{13}$$

$$(ii) x = \frac{3}{10}, y = \frac{-15}{8}$$

$$(iii) x = \frac{-7}{8}, y = \frac{-4}{9}$$

$$(iv) x = 5, y = \frac{-9}{10}$$

Solution. (i) L.H.S. = $x \times y = \left(\frac{-5}{7}\right) \times \frac{9}{13}$

$$= \frac{-5 \times 9}{7 \times 13} = \frac{-45}{91}$$

$$\text{R.H.S.} = \left(\frac{9}{13}\right) \times \left(\frac{-5}{7}\right) = \frac{9 \times (-5)}{13 \times 7}$$

$$= \frac{-45}{91}$$

$$\therefore \text{L.H.S.} = \text{R.H.S.}$$

Thus $x \times y = y \times x$

$$(ii) \text{L.H.S.} = x \times y = \frac{3}{10} \times \left(\frac{-15}{8}\right)$$

$$= \frac{3 \times \overset{3}{\cancel{-15}}}{\underset{2}{10} \times 8} = \frac{-9}{16}$$

$$\text{R.H.S.} = y \times x = \left(\frac{-15}{8}\right) \times \frac{3}{10}$$

$$= \frac{\overset{3}{\cancel{-15}} \times 3}{8 \times \underset{2}{\cancel{10}}} = \frac{-9}{16}$$

$$\therefore \text{L.H.S.} = \text{R.H.S.}$$

Thus, $x \times y = y \times x$

$$(iii) \text{L.H.S.} = x \times y = \left(\frac{-7}{8}\right) \times \left(\frac{-4}{9}\right)$$

$$= \frac{\overset{1}{\cancel{-7}} \times \overset{1}{\cancel{-4}}}{\underset{2}{8} \times 9} = \frac{7}{18}$$

$$\text{R.H.S.} = y \times x = \left(\frac{-4}{9}\right) \times \left(\frac{-7}{8}\right)$$

$$= \frac{1}{9 \times \cancel{8}} \times (-7) = \frac{7}{18}$$

$$\therefore \text{L.H.S.} = \text{R.H.S.}$$

Thus, $x \times y = y \times x$

$$(iv) \text{L.H.S.} = x \times y = 5 \times \frac{-9}{10}$$

$$= \frac{\cancel{10} \times (-9)}{10} = \frac{-9}{2}$$

$$\text{R.H.S.} = y \times x = \frac{-9}{10} \times 5 = \frac{(-9) \times \cancel{5}}{10} = \frac{-9}{2}$$

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

$$\therefore \text{L.H.S.} = \text{R.H.S.}$$

Thus, $x \times y = y \times x$

Q. 3. Verify that $x \times (y \times z) = (x \times y) \times z$ for the following when :

$$(i) \ x = \frac{-7}{6}, y = \frac{12}{5}, z = \frac{-2}{9}$$

$$(ii) \ x = \frac{1}{2}, y = \frac{-5}{8}, z = \frac{-3}{5}$$

$$(iii) \ x = \frac{5}{7}, y = \frac{-12}{10}, z = \frac{-4}{9}$$

$$(iv) \ x = \frac{-3}{5}, y = \frac{2}{9}, z = \frac{10}{7}$$

Solution. (i) L.H.S. = $x \times (y \times z)$

$$= \frac{-7}{6} \times \left(\frac{12}{5} \times \left(\frac{-2}{9}\right)\right)$$

$$= -\frac{7}{6} \times \left(\frac{\cancel{12} \times (-2)}{5 \times \cancel{9}}\right)$$

$$= \frac{-7}{6} \times \left(\frac{-8}{15}\right)$$

$$= \frac{(-7) \times (-\cancel{8})}{\cancel{6} \times 15} = \frac{28}{45}$$

$$\text{R.H.S.} = (x \times y) \times z$$

$$= \left[\left(\frac{-7}{6}\right) \times \frac{12}{5}\right] \times \left(\frac{-2}{9}\right)$$

$$= \left[\frac{-7 \times \cancel{12}}{\cancel{6} \times 5}\right] \times \left(\frac{-2}{9}\right)$$

$$= \left(\frac{-14}{5}\right) \times \left(\frac{-2}{9}\right)$$

$$= \frac{(-14) \times (-2)}{5 \times 9} = \frac{28}{45}$$

$$\therefore \text{L.H.S.} = \text{R.H.S.}$$

Thus, $x \times (y \times z) = (x \times y) \times z$

(ii) L.H.S. = $x \times (y \times z)$

$$= \frac{1}{2} \times \left[\left(\frac{-5}{8}\right) \times \left(\frac{-3}{5}\right)\right]$$

$$= \frac{1}{2} \times \frac{(-\cancel{5}) \times (-3)}{8 \times \cancel{5}}$$

$$= \frac{1}{2} \times \frac{3}{8} = \frac{3}{16}$$

$$\text{R.H.S.} = (x \times y) \times z$$

$$= \left[\frac{1}{2} \times \left(\frac{-5}{8}\right)\right] \times \left(\frac{-3}{5}\right)$$

$$= \left(\frac{-5}{16}\right) \times \left(\frac{-3}{5}\right)$$

$$= \frac{(-\cancel{5}) \times (-3)}{16 \times \cancel{5}} = \frac{3}{16}$$

$$\therefore \text{L.H.S.} = \text{R.H.S.}$$

Thus, $x \times (y \times z) = (x \times y) \times z$

$$\begin{aligned}
 \text{(iii) L.H.S.} &= x \times (y \times z) \\
 &= \frac{5}{7} \times \left[\left(\frac{-12}{10} \right) \times \left(\frac{-4}{9} \right) \right] \\
 &= \frac{5}{7} \times \left[\frac{\overset{4}{(-12)} \times \overset{2}{(-4)}}{\underset{5}{10} \times \underset{3}{9}} \right] \\
 &= \frac{5}{7} \times \frac{\overset{1}{\cancel{8}} \times 8}{7 \times \underset{3}{\cancel{15}}} = \frac{8}{21}
 \end{aligned}$$

$$\begin{aligned}
 \text{R.H.S.} &= (x \times y) \times z \\
 &= \left[\frac{5}{7} \times \left(\frac{-12}{10} \right) \right] \times \left(\frac{-4}{9} \right) \\
 &= \frac{\overset{1}{\cancel{5}} \times \overset{6}{(-12)}}{7 \times \underset{2}{\cancel{10}}} \times \left(\frac{-4}{9} \right) \\
 &= \frac{-6}{7} \times \left(\frac{-4}{9} \right) \\
 &= \frac{\overset{2}{-\cancel{6}} \times (-4)}{7 \times \underset{3}{\cancel{9}}} = \frac{8}{21}
 \end{aligned}$$

∴ L.H.S. = R.H.S.

Thus, $x \times (y \times z) = (x \times y) \times z$

$$\begin{aligned}
 \text{(iv) L.H.S.} &= x \times (y \times z) = \frac{-3}{5} \times \left(\frac{2}{9} \times \frac{10}{7} \right) \\
 &= \frac{-3}{5} \times \left(\frac{20}{63} \right) = \frac{\overset{1}{-\cancel{3}} \times \overset{4}{20}}{\underset{21}{5} \times \underset{3}{\cancel{63}}} \\
 &= \frac{-4}{21}
 \end{aligned}$$

$$\begin{aligned}
 \text{R.H.S.} &= (x \times y) \times z = \left(\frac{-3}{5} \times \frac{2}{9} \right) \times \frac{10}{7} \\
 &= \left(\frac{\overset{1}{-\cancel{3}} \times 2}{5 \times \underset{3}{\cancel{9}}} \right) \times \frac{10}{7}
 \end{aligned}$$

$$\begin{aligned}
 &= \frac{-2}{15} \times \frac{10}{7} \\
 &= \frac{-2 \times \overset{2}{\cancel{10}}}{\underset{3}{15} \times 7} = \frac{-4}{21}
 \end{aligned}$$

∴ L.H.S. = R.H.S.

Thus, $x \times (y \times z) = (x \times y) \times z$

Q. 4. Write the reciprocal of each of the following :

- (i) -2
- (ii) $\frac{-5}{8}$
- (iii) $\frac{7}{-9}$
- (iv) $\frac{-3}{4}$
- (v) $\frac{2}{7} \times \left(\frac{-3}{15} \right)$
- (vi) $\left(\frac{-3}{8} \right) \times \left(\frac{-12}{9} \right)$
- (vii) $(-8) \times \frac{5}{6}$
- (viii) $3 \times \left(\frac{-7}{9} \right)$

Solution.

(i) Reciprocal of -2 i.e. $\frac{-2}{1} = \frac{1}{-2} = \frac{-1}{2}$ Ans.

(ii) Reciprocal of $\frac{-5}{8} = \frac{8}{-5} = \frac{-8}{5}$ Ans.

(iii) Reciprocal of $\frac{7}{-9} = \frac{-9}{7}$ Ans.

(iv) Reciprocal of $\frac{-3}{4} = \frac{4}{-3} = \frac{-4}{3}$ Ans.

(v) We have, $\frac{2}{7} \times \left(\frac{-3}{15} \right) = \frac{2 \times \overset{1}{(-\cancel{3})}}{7 \times \underset{5}{\cancel{15}}} = \frac{-2}{35}$

∴ Reciprocal of $\frac{-2}{35} = \frac{35}{-2} = \frac{-35}{2}$

Ans.

(vi) We have, $\left(\frac{-3}{8}\right) \times \left(\frac{-12}{9}\right)$

$$= \frac{\overset{1}{\cancel{8}} \times \overset{1}{\cancel{12}}}{\underset{2}{\cancel{8}} \times \underset{3}{\cancel{9}}} = \frac{1}{2}$$

Reciprocal of $\frac{1}{2} = \frac{2}{1} = 2$ Ans.

(vii) We have, $(-8) \times \frac{5}{6} = \frac{\overset{4}{\cancel{8}} \times 5}{\underset{3}{\cancel{6}}} = \frac{-20}{3}$

\therefore Reciprocal of $\frac{-20}{3} = \frac{3}{-20} = \frac{-3}{20}$ Ans.

(viii) We have, $3 \times \left(\frac{-7}{9}\right) = \frac{\overset{1}{\cancel{3}} \times (-7)}{\underset{3}{\cancel{9}}} = \frac{-7}{3}$

\therefore Reciprocal of $\frac{-7}{3} = \frac{3}{-7} = \frac{-3}{7}$ Ans.

Q. 5. Verify that $x \times (y + z) = x \times y + x \times z$ when :

(i) $x = \frac{3}{5}, y = \frac{25}{24}, z = 10$

(ii) $x = \frac{-5}{4}, y = \frac{8}{5}, z = \frac{16}{15}$

(iii) $x = \frac{-2}{7}, y = \frac{14}{10}, z = \frac{3}{5}$

Solution. (i) L.H.S. = $x \times (y + z)$

$$= \frac{3}{5} \times \left(\frac{25}{24} + 10\right) = \frac{3}{5} \times \left(\frac{25 + 240}{24}\right)$$

$$= \frac{3}{5} \times \left(\frac{265}{24}\right) = \frac{\overset{1}{\cancel{3}} \times \overset{53}{\cancel{265}}}{\underset{1}{\cancel{5}} \times \underset{8}{\cancel{24}}} = \frac{53}{8}$$

$$\text{R.H.S.} = x \times y + x \times z = \frac{3}{5} \times \frac{25}{24} + \frac{3}{5} \times 10$$

$$= \frac{\overset{1}{\cancel{3}} \times \overset{5}{\cancel{25}}}{\underset{1}{\cancel{5}} \times \underset{8}{\cancel{24}}} + \frac{3 \times \overset{2}{\cancel{10}}}{\underset{1}{\cancel{5}}} = \frac{5}{8} + \frac{6}{1}$$

$$= \frac{5 \times 1 + 6 \times 8}{8} = \frac{5 + 48}{8} = \frac{53}{8}$$

\therefore L.H.S. = R.H.S.

Thus, $x \times (y + z) = x \times y + x \times z$

(ii) L.H.S. = $x \times (y + z) = \frac{-5}{4} \times \left(\frac{8}{5} + \frac{16}{15}\right)$

$$= \frac{-5}{4} \times \left(\frac{8 \times 3 + 16 \times 1}{15}\right)$$

$$= \frac{-5}{4} \times \left(\frac{24 + 16}{15}\right) = \frac{-5}{4} \times \frac{40}{15}$$

$$= \frac{\overset{1}{\cancel{-5}} \times \overset{10}{\cancel{40}}}{\underset{1}{\cancel{4}} \times \underset{3}{\cancel{15}}} = \frac{-10}{3}$$

R.H.S. = $x \times y + x \times z$

$$= \frac{-5}{4} \times \frac{8}{5} + \left(\frac{-5}{4}\right) \times \frac{16}{15}$$

$$= \frac{\overset{1}{\cancel{-5}} \times \overset{2}{\cancel{8}}}{\underset{1}{\cancel{4}} \times \underset{1}{\cancel{5}}} + \frac{\overset{1}{\cancel{-5}} \times \overset{4}{\cancel{16}}}{\underset{1}{\cancel{4}} \times \underset{3}{\cancel{15}}}$$

$$= -2 + \left(\frac{-4}{3}\right)$$

$$= \frac{-2 \times 3 + (-4) \times 1}{3}$$

$$= \frac{-6 - 4}{3} = \frac{-10}{3}$$

\therefore L.H.S. = R.H.S.

Thus, $x \times (y + z) = x \times y + x \times z$

$$(iii) \text{ L.H.S.} = x \times (y + z) = \frac{-2}{7} \times \left(\frac{14}{10} + \frac{3}{5} \right)$$

$$= \frac{-2}{7} \times \left(\frac{14 + 3 \times 2}{10} \right)$$

$$= \frac{-2}{7} \times \left(\frac{14 + 6}{10} \right)$$

$$= \frac{-2}{7} \times \frac{20}{10} = \frac{-2 \times \cancel{20}^2}{7 \times \cancel{10}_1} = \frac{-4}{7}$$

$$\text{R.H.S.} = x \times y + x \times z$$

$$= \frac{-2}{7} \times \frac{14}{10} + \left(\frac{-2}{7} \right) \times \frac{3}{5}$$

$$= \frac{\cancel{-2}^1 \times \cancel{14}^2}{\cancel{7}_1 \times \cancel{10}_5} + \frac{(-2) \times 3}{7 \times 5}$$

$$= \frac{-2}{5} + \frac{(-6)}{35}$$

$$= \frac{-2 \times 7 + (-6) \times 1}{35} = \frac{-14 - 6}{35}$$

$$= \frac{\cancel{-20}^4}{\cancel{35}_7} = -\frac{4}{7}$$

$\therefore \text{L.H.S.} = \text{R.H.S.}$

Thus, $x \times (y + z) = x \times y + x \times z$

Q. 6. Verify that $x \times (y - z) = x \times y - x \times z$

when :

$$(i) \ x = \frac{-2}{3}, y = \frac{3}{4}, z = \frac{6}{7}$$

$$(ii) \ x = \frac{-1}{2}, y = \frac{5}{6}, z = \frac{-3}{10}$$

$$(iii) \ x = \frac{3}{4}, y = \frac{8}{9}, z = -10$$

Solution. (i) $\text{L.H.S.} = x \times (y - z)$

$$= \left(\frac{-2}{3} \right) \times \left(\frac{3}{4} - \frac{6}{7} \right)$$

$$= \left(\frac{-2}{3} \right) \times \left(\frac{3 \times 7 - 6 \times 4}{28} \right)$$

$$= \frac{-2}{3} \times \left(\frac{21 - 24}{28} \right) = \frac{-2}{3} \times \left(\frac{-3}{28} \right)$$

$$= \frac{\cancel{-2}^1 \times \cancel{-3}^1}{\cancel{3}_1 \times \cancel{28}_{14}} = \frac{1}{14}$$

$$\text{R.H.S.} = x \times y - x \times z$$

$$= \left(\frac{-2}{3} \times \frac{3}{4} \right) - \left(\frac{-2}{3} \times \frac{6}{7} \right)$$

$$= \left(\frac{\cancel{-2}^1 \times \cancel{3}^1}{\cancel{3}_1 \times \cancel{4}_2} \right) - \left(\frac{-2 \times \cancel{6}^2}{\cancel{3}_1 \times 7} \right)$$

$$= -\frac{1}{2} - \left(\frac{-4}{7} \right)$$

$$= \frac{(-1) \times 7 - (-4 \times 2)}{2 \times 7}$$

$$= \frac{-7 + 8}{14} = \frac{1}{14}$$

$\therefore \text{L.H.S.} = \text{R.H.S.}$

Thus, $x \times (y - z)$

$$= x \times y - x \times z$$

(ii) $\text{L.H.S.} = x \times (y - z)$

$$= -\frac{1}{2} \times \left[\frac{5}{6} - \left(\frac{-3}{10} \right) \right]$$

$$= \frac{1}{2} \times \left[\frac{5 \times 5 - (-3)(3)}{30} \right]$$

$$= \frac{-1}{2} \times \left(\frac{25 + 9}{30} \right)$$

$$= -\frac{1}{2} \times \frac{34}{30} = \frac{-1 \times \cancel{34}^{17}}{\cancel{2}_1 \times 30} = \frac{-17}{30}$$

$$\text{R.H.S.} = x \times y - x \times z$$

$$= \frac{-1}{2} \times \frac{5}{6} - \left(\frac{-1}{2} \right) \times \left(\frac{-3}{10} \right)$$

$$= \frac{-1 \times 5}{2 \times 6} - \frac{(-1)(-3)}{(2)(10)}$$

$$= \frac{-5}{12} - \frac{3}{20}$$

$$= \frac{-5 \times 5 - 3 \times 3}{60}$$

$$= \frac{-25 - 9}{60} = \frac{-34}{60} = \frac{-17}{30}$$

∴ L.H.S. = R.H.S.

Thus, $x \times (y - z) = x \times y - x \times z$

(iii) L.H.S. = $x \times (y - z)$

$$= \frac{3}{4} \times \left(\frac{8}{9} - \frac{(-10)}{1} \right)$$

$$= \frac{3}{4} \times \left(\frac{8 - (-10) \times 9}{9} \right)$$

$$= \frac{3}{4} \times \left(\frac{8 + 90}{9} \right)$$

$$= \frac{3}{4} \times \frac{98}{9} = \frac{\cancel{3} \times \cancel{98}^{\cancel{49}}}{\cancel{4} \times \cancel{9}_2^3} = \frac{49}{6}$$

∴ R.H.S. = $x \times y - x \times z$

$$= \frac{3}{4} \times \frac{8}{9} - \frac{3}{4} \times \left(\frac{-10}{1} \right)$$

$$= \frac{\cancel{3} \times \cancel{8}^2}{\cancel{4} \times \cancel{9}_1^3} - \frac{3 \times (-10)}{\cancel{4} \times 1}$$

$$= \frac{2}{3} + \frac{15}{2} = \frac{2 \times 2 + 15 \times 3}{6}$$

$$= \frac{4 + 45}{6} = \frac{49}{6}$$

∴ L.H.S. = R.H.S.

Thus, $x \times y - z = x \times y - x \times z$

Q. 7. Name the property of multiplication of rational numbers represented by the following statement :

(i) $\frac{-2}{5} \times \frac{3}{4} = \frac{3}{4} \times \left(\frac{-2}{5} \right)$

(ii) $\frac{-3}{8} \times 1 = \frac{-3}{8} = 1 \times \frac{-3}{8}$

(iii) $\frac{5}{8} \times \left(\frac{3}{4} + \frac{2}{3} \right) = \frac{5}{8} \times \frac{3}{4} + \frac{5}{8} \times \frac{2}{3}$

(iv) $\left(\frac{-2}{7} \times \frac{5}{4} \right) \times \frac{7}{10} = \frac{-2}{7} \times \left(\frac{5}{4} \times \frac{7}{10} \right)$

(v) $\left(\frac{-7}{9} \right) \times \frac{3}{4} - \left(\frac{-7}{9} \right) \times \frac{5}{10}$

$$= \left(\frac{-7}{9} \right) \times \left(\frac{3}{4} - \frac{5}{10} \right)$$

Ans.

- (i) Commutative property
- (ii) Existence of Identity
- (iii) Distribution over addition
- (iv) Associative property
- (v) Distribution over subtraction.

Q. 8. Multiple Choice Questions :

(i) For rational numbers x, y and z , which of the following is not true :

- (a) $x \times y = y \times x$
- (b) $x \times (y - z) = x \times y - x \times z$
- (c) $x - y = y - x$
- (d) $x \times (y \times z) = (x \times y) \times z$

(ii) If $\frac{-5}{8} \times \frac{4}{7} = \frac{4}{7} \times \left(\frac{-5}{8} \right)$ then which of the

following property it holds :

- (a) Closure
- (b) Commutative
- (c) Associative
- (d) Identity.

(iii) The multiplicative identity of rational number 'a' is :

- (a) 1
- (b) 0
- (c) $\frac{1}{a}$
- (d) $-a$

(iv) The statement $\frac{-5}{8} \times \left(\frac{3}{4} - \frac{2}{3} \right) = \left(\frac{-5}{8} \right)$

$\times \frac{3}{4} - \left(\frac{-5}{8} \right) \times \frac{2}{3}$ holds under the property.

- (a) Associative of multiplication
- (b) Associative of subtraction
- (c) Distribution of multiplication over addition
- (d) Distribution of multiplication over subtraction.

(v) Which of the following number does not have multiplicative inverse ?

(a) 0

(b) -1

(c) 1

(d) $\frac{-2}{-3}$

(vi) Which of the following number is multiplicative inverse of itself ?

(a) 0

(b) -1

(c) 1

(d) Both (b) and (c).

Ans. (i) (c) $x - y = y - x$

(ii) (b) Commutative

(iii) (a) 1

(iv) (d) Distribution of multiplication over subtraction

(v) (a) 0

(vi) (d) Both (b) and (c).