

Board – CBSE

Class – 7th

Topic – Fractions and Decimals 2.3

**Q.1** Find:

(i)  $\frac{1}{4}$  of (a)  $\frac{1}{4}$  (b)  $\frac{3}{5}$  (c)  $\frac{4}{3}$

(ii)  $\frac{1}{7}$  of (a)  $\frac{2}{9}$  (b)  $\frac{6}{5}$  (c)  $\frac{3}{10}$

**Sol:** (i) (a)  $\frac{1}{4} \times \frac{1}{4} = \frac{1}{16}$  (b)  $\frac{1}{4} \times \frac{3}{5} = \frac{3}{20}$  (c)  $\frac{1}{4} \times \frac{4}{3} = \frac{1}{3}$

(ii) (a)  $\frac{1}{7} \times \frac{2}{9} = \frac{2}{63}$  (b)  $\frac{1}{7} \times \frac{6}{5} = \frac{6}{35}$  (c)  $\frac{1}{7} \times \frac{3}{10} = \frac{3}{70}$

**Q.2** Multiply and reduce to lowest form (if possible):

(i)  $\frac{2}{3} \times 2\frac{2}{3}$  (ii)  $\frac{2}{7} \times \frac{7}{9}$  (iii)  $\frac{3}{8} \times \frac{6}{4}$  (iv)  $\frac{9}{5} \times \frac{3}{5}$

(v)  $\frac{1}{3} \times \frac{15}{8}$  (vi)  $\frac{11}{2} \times \frac{3}{10}$  (vii)  $\frac{4}{5} \times \frac{12}{7}$

**Sol:** (i)  $\frac{2}{3} \times 2\frac{2}{3} = \frac{2}{3} \times \frac{8}{3} = \frac{16}{9} = 1\frac{7}{9}$  (ii)  $\frac{2}{7} \times \frac{7}{9} = \frac{2}{9}$  (iii)  $\frac{3}{8} \times \frac{6}{4} = \frac{9}{16}$

(iv)  $\frac{9}{5} \times \frac{3}{5} = \frac{27}{25} = 1\frac{2}{25}$  (v)  $\frac{1}{3} \times \frac{15}{8} = \frac{5}{8}$  (vi)

$\frac{11}{2} \times \frac{3}{10} = \frac{33}{20} = 1\frac{13}{20}$  (vii)  $\frac{4}{5} \times \frac{12}{7} = \frac{48}{35} = 1\frac{13}{35}$

**Q.3** Multiply the following fractions:

(i)  $\frac{2}{5} \times 5\frac{1}{4}$  (ii)  $6\frac{2}{5} \times \frac{7}{9}$  (iii)  $\frac{3}{2} \times 5\frac{1}{3}$  (iv)  $\frac{5}{6} \times 2\frac{3}{7}$

(v)  $3\frac{2}{5} \times \frac{4}{7}$  (vi)  $2\frac{3}{5} \times 3$  (vii)  $3\frac{4}{7} \times \frac{3}{5}$

**Sol:** (i)  $\frac{2}{5} \times 5\frac{1}{4} = \frac{2}{5} \times \frac{21}{4} = \frac{21}{10}$

This is an improper fraction and it can be written as a mixed fraction as  $2\frac{1}{10}$

(ii)  $6\frac{2}{5} \times \frac{7}{9} = \frac{32}{5} \times \frac{7}{9} = \frac{224}{45}$

This is an improper fraction and it can be written as a mixed fraction as  $4\frac{44}{45}$

(iii)  $\frac{3}{2} \times 5\frac{1}{3} = \frac{3}{2} \times \frac{16}{3} = 8$

This is a whole number.

$$(vi) \frac{5}{6} \times 2\frac{3}{7} = \frac{5}{6} \times \frac{17}{7} = \frac{85}{42}$$

This is an improper fraction and it can be written as a mixed fraction as  $2\frac{1}{42}$

$$(v) 3\frac{2}{5} \times \frac{4}{7} = \frac{17}{5} \times \frac{4}{7} = \frac{68}{35}$$

This is an improper fraction and it can be written as a mixed fraction as  $1\frac{33}{35}$

$$(vi) 2\frac{3}{5} \times 3 = \frac{13}{5} \times 3 = \frac{39}{5}$$

This is an improper fraction and it can be written as a mixed fraction as  $7\frac{4}{5}$

$$(vii) 3\frac{4}{7} \times \frac{3}{5} = \frac{25}{7} \times \frac{3}{5} = \frac{15}{7}$$

This is an improper fraction and it can be written as a mixed fraction as  $2\frac{1}{7}$

**Q.4** Which is greater:

$$(i) \frac{2}{7} \text{ of } \frac{3}{4} \text{ or } \frac{3}{5} \text{ of } \frac{5}{8} \qquad (ii) \frac{1}{2} \text{ of } \frac{6}{7} \text{ or } \frac{2}{3} \text{ of } \frac{3}{7}$$

**Sol:** (i)  $\frac{2}{7}$  of  $\frac{3}{4}$  or  $\frac{3}{5}$  of  $\frac{5}{8} \Rightarrow \frac{2}{7} \times \frac{3}{4}$  or  $\frac{3}{5} \times \frac{5}{8}$

$$\Rightarrow \frac{3}{14} \text{ or } \frac{3}{8} \Rightarrow \frac{3}{14} < \frac{3}{8}$$

Thus,  $\frac{3}{5}$  of  $\frac{2}{7}$  is greater.

$$(ii) \frac{1}{2} \text{ of } \frac{6}{7} \text{ or } \frac{2}{3} \text{ of } \frac{3}{7} \Rightarrow \frac{1}{2} \times \frac{6}{7} \text{ or } \frac{2}{3} \times \frac{3}{7}$$

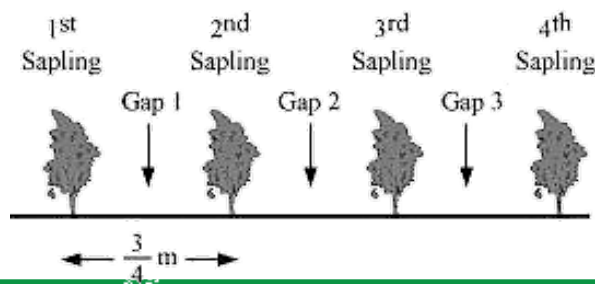
$$\Rightarrow \frac{3}{7} \text{ or } \frac{2}{7} \Rightarrow \frac{3}{7} > \frac{2}{7}$$

Thus,  $\frac{1}{2}$  of  $\frac{6}{7}$  is greater.

**Q.5** Saili plants 4 saplings in a row in her garden. The distance between two adjacent saplings is  $\frac{3}{4}$  m. Find the distance between the first and the last sapling.

**Sol:** The distance between two adjacent saplings =  $\frac{3}{4}$  m.

Saili planted 4 saplings in a row, with a gap of  $\frac{3}{4}$  m between the adjacent saplings.



Therefore, the distance between the first and the last saplings

$$= 3 \times \frac{3}{4} \text{ m.} = \frac{9}{4} \text{ m} = 2\frac{1}{4} \text{ m}$$

Thus, the distance between the first and the last saplings is  $2\frac{1}{4}$  m.

**Q.6** Lipika reads a book for  $1\frac{3}{4}$  hours every day. She reads the entire book in 6 days.  
How many hours in all were required by her to read the book?

**Sol:** Time taken by Lipika to read a book =  $1\frac{3}{4}$  hours.

She reads the entire book in 6 days.

$$\begin{aligned} \text{Now, the total no. of hours taken by her to read the entire book} &= 1\frac{3}{4} \times 6 = \frac{7}{4} \times 6 = \\ &= \frac{21}{2} = 10\frac{1}{2} \text{ hours} \end{aligned}$$

Thus 10 hours were required by her to read the book.

**Q.7** A car runs 16 km using 1 liter of petrol. How much distance will it cover using  $2\frac{3}{4}$  liters of petrol?

**Sol:** Distance covered by the car in 1 liter of petrol = 16 km

In  $2\frac{3}{4}$  liters of petrol, the car will cover a distance of =

$$= 2\frac{3}{4} \text{ of } 16 \text{ km}$$

$$= \frac{11}{4} \times 16 = 44 \text{ km}$$

Thus, the car covers 44 km in  $2\frac{3}{4}$  liters of petrol.

**Q.8** (a) (i) Provide the number in the box  $\square$ , such that  $\frac{2}{3} \times \square = \frac{10}{30}$ .

(ii) The simplest form of the number obtained in  $\square$  is \_\_\_\_\_.

(b) (i) Provide the number in the box  $\square$ , such that  $\frac{3}{5} \times \square = \frac{24}{75}$ .

(ii) The simplest form of the number obtained in  $\square$  is \_\_\_\_\_.

**Sol:** (a) (i)  $\frac{2}{3} \times \frac{5}{10} = \frac{10}{30}$  (ii) The simplest form of  $\frac{5}{10}$  is  $\frac{1}{2}$ .

(b) (i)  $\frac{3}{5} \times \frac{8}{15} = \frac{24}{75}$

(ii) The simplest form of  $\frac{8}{15}$  is  $\frac{8}{15}$