Chapter – 2
Fractions and Decimals
Exercise 2.3

1. Find:
(i) 1/4 of (a) 1/4 (b) 3/5 (c) 4/5
(ii) 1/7 of (a) 2/9 (b) 6/5 (c) 3/10

Answer:

(i) We have,

(a) $\frac{1}{4}$ of $\frac{1}{4}$

$= \frac{1}{4} \times \frac{1}{4}$

$= \frac{1}{16}$

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

$= \frac{1}{4} \times \frac{3}{5}$

$= \frac{3}{20}$

(c) Also,

$\frac{1}{4}$ of $\frac{4}{5}$

$= \frac{1}{4} \times \frac{4}{5}$

$= 5$

(ii) We have,

(a) $\frac{1}{7}$ of $\frac{2}{9}$

$= \frac{1}{7} \times \frac{2}{9}$

$= \frac{2}{63}$

(b) $\frac{1}{7}$ of $\frac{6}{5}$

$= \frac{1}{7} \times \frac{6}{5}$

$= \frac{6}{35}$

(c) Also,

$\frac{1}{7}$ of $\frac{3}{10}$

$\frac{1}{7} \times \frac{3}{10}$

$= \frac{3}{70}$

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) $\frac{4}{5} \times \frac{12}{7}$

Answer:

(i) We have,

$\frac{2}{3} \times 2\frac{2}{3}$

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

$= \frac{16}{9}$

$= 1\frac{7}{9}$

(ii) We have,

$\frac{2}{7} \times \frac{7}{9}$

$= \frac{2}{9}$

(iii) We have,

$\frac{3}{8} \times \frac{6}{4}$

$= \frac{9}{16}$

(iv) We have,

$\frac{9}{5}$ or $\frac{3}{5}$

$= \frac{27}{25}$

$= 1\frac{2}{5}$

(v) We have,

$\frac{1}{3} \times \frac{15}{8}$

$= \frac{5}{8}$

(vi) We have,

$\frac{11}{2} \times \frac{3}{10}$

$= \frac{33}{20}$

$= 1\frac{13}{20}$

(vii) We have,

$\frac{4}{5} \times \frac{12}{7}$

$= \frac{48}{35}$

$1\frac{13}{35}$

3. Multiply the following fractions:

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

Answer:

(i) We have,

$\frac{2}{5} \times 5\frac{1}{4}$

$= \frac{2}{5} \times \frac{21}{4}$

$= \frac{21}{10}$

We have an improper fraction and now it can be written in terms of the mixed fraction is as follows:

$\frac{21}{10} = 2\frac{1}{10}$

(ii) We have,

$6\frac{2}{5} \times \frac{7}{9}$

$= \frac{32}{5} \times \frac{7}{9}$

$= \frac{224}{45}$

We have an improper fraction and now it can be written in terms of mixed fraction is as follows:

$\frac{224}{45} = 4\frac{44}{45}$

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

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

$= 8$

In this question, we have a whole number

(iv) $\frac{5}{6} \times 2\frac{3}{7}$

$= \frac{5}{6} \times \frac{17}{7}$

$= \frac{85}{42}$

We have an improper fraction and now it can be written in terms of mixed fraction is as follows:

$\frac{85}{42} = 2\frac{1}{42}$

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

$= \frac{17}{5} \times \frac{4}{7}$

$= \frac{68}{35}$

We have an improper fraction and now it can be written in terms of the mixed fraction is as follows:

$\frac{68}{35} = 1\frac{33}{35}$

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

$= \frac{13}{5} \times 3$

$= \frac{39}{5}$

We have an improper fraction and now it can be written in terms of the mixed fraction is as follows:

$\frac{39}{5} = 7\frac{4}{5}$

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

$= \frac{25}{7} \times \frac{3}{5}$

$= \frac{15}{7}$

We have an improper fraction and now it can be written in terms of mixed fraction is as follows:

$\frac{15}{7} = 2\frac{1}{7}$

4. Which is greater:
(i) 2/7 of 3/4 or 3/5 of 5/8
(ii) 1/2 of 6/7 or 2/3 of 3/7

Answer:

(i) We have,

$\frac{2}{7}$ of $\frac{3}{4}$

$= \frac{2}{7} \times \frac{3}{4}$

$= \frac{3}{14}$

Also,

$\frac{3}{5}$ of $\frac{5}{8}$

$= \frac{3}{5} \times \frac{5}{8}$

$= \frac{3}{8}$

Now converting the above fractions in to like fraction, we get:

$\frac{3}{14} = \frac{3\times40}{14\times4}$

$= \frac{12}{56}$

Also,

$\frac{3}{8} = \frac{3\times7}{8\times7}$

$= \frac{21}{56}$

Since,

$\frac{21}{56} > \frac{12}{56}$

Therefore,

$\frac{3}{8} > \frac{3}{14}$

Hence,

$\frac{3}{5}$ is greater than $\frac{5}{8}$

(ii) We have,

$\frac{1}{2}$ of $\frac{6}{7}$

$= \frac{1}{2} \times \frac{6}{7}$

$= \frac{3}{7}$

Also,

$\frac{2}{3}$ of $\frac{3}{7}$

$= \frac{2}{3} \times \frac{3}{7}$

$= \frac{2}{7}$

Since,

$\frac{3}{7} > \frac{2}{7}$

Hence,

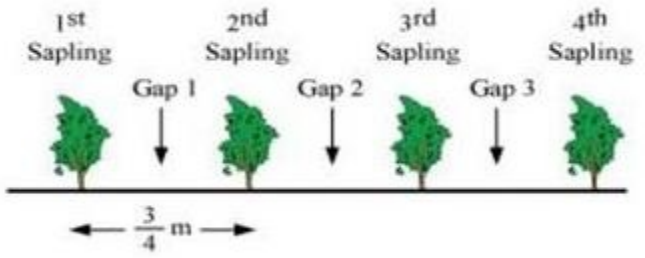
$\frac{3}{7}$ is greater than $\frac{2}{7}$.

5. Saili plants 4 saplings, in a row, in her garden. The distance between two adjacent saplings is 3/4m. Find the distance between the first and the last sapling.

Answer:

It is given in the question that,

Length of 1 gap = $\frac{3}{4}$ m



Also, from the figure it can be observed that:

Gaps between first and last saplings = 3

Therefore,

Distance between First and last sapling = $3 \times \frac{3}{4}$

$= \frac{9}{4}$

$= 2\frac{1}{4}$ m

6. Lipika reads a book for hours every day. She reads the entire book in 6 days. How many hours in all were required by her to read the book?

Answer:

It is given in the question that,

Number of hours Lipika reads the book $= 1\frac{3}{4}$

$= \frac{7}{4}$ hours

Also,

Total days in which she completes the book = 6

Therefore,

Total number of hours required by her to complete the book = $\frac{7}{4} \times 6$

$= \frac{21}{2}$

$= 10\frac{1}{2} = 10.5$ hours

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

Answer:

It is given in the question that,

Distance travelled by a car in 1 litre of petrol = 16 km

Also,

Total quantity of petrol = $2\frac{3}{4}$ litre

$= \frac{11}{4}$ litres

Therefore,

Distance travelled by the car in $\frac{11}{4}$ litres of petrol = $\frac{11}{4} \times 16$

= 44 km

Hence,

The car will cover a distance of 44 kms in $2\frac{3}{4}$ litres of petrol

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 _____.

Answer:

(i) We have,

$\frac{2}{3} \times \frac{5}{10} = \frac{10}{30}$

Hence,

The number in the box will be $\frac{5}{10}$

(ii) We have,

The simplest form of $\frac{5}{10}$:

$\frac{5}{10} = \frac{1}{2}$

(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 _____.

Answer:

(i) We have,

$\frac{3}{5} \times \frac{8}{15} = \frac{24}{75}$

Hence,

The number in the box will be $\frac{8}{15}$

(ii) From above,

$\frac{8}{15}$ is itself in a simplest form and it cannot be further simplified