NCERT Solutions For Class 7 Maths Fractions and Decimals Exercise 2.3

Q1. 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) $\frac{3}{10}$

Ans:

(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) $\frac{1}{7} \times \frac{3}{10} = \frac{3}{70}$

Q2. 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) $\frac{4}{5} \times \frac{12}{7}$

Ans:

(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) $\frac{4}{5} \times \frac{12}{7} = \frac{48}{35} = 1\frac{13}{35}$

Q3. 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) $3\frac{4}{7} \times \frac{3}{5}$

Ans:

(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) $\frac{3}{2}\times5\frac{1}{3}=\frac{3}{2}\times\frac{16}{3}=8$

This is a whole number.

(iv) $\frac{5}{6}\times2\frac{3}{7}=\frac{5}{6}\times\frac{17}{7}=\frac{85}{42}$

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) $2\frac{3}{5}\times3=\frac{13}{5}\times3=\frac{39}{5}$

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 $2\frac{1}{7}$.

Q4. Which is greater:

(i) $\frac{2}{7}$ of $\frac{3}{4}$ or $\frac{3}{5}$ of $\frac{5}{8}$

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

Ans:

(i) $\frac{2}{7}\times\frac{3}{4}=\frac{3}{14}$

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

Converting these fractions into like fractions,

$\frac{3}{14}=\frac{3\times4}{14\times4}=\frac{12}{56}$

$\frac{3}{8}=\frac{3\times7}{8\times7}=\frac{21}{56}$

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

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

Therefore, $\frac{3}{5}$ of $\frac{5}{8}$ is greater.

(ii) $\frac{1}{2}\times\frac{6}{7}=\frac{3}{7}$

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

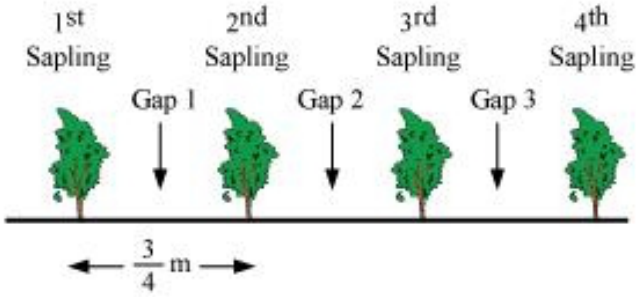
Since $3 > 2$,

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

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

Q5. 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.

Ans:



From the figure, it can be observed that gaps between 1st and last sapling = 3

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

Therefore, distance between **I** and **IV** sapling $= 3 \times \frac{3}{4} = \frac{9}{4} = 2\frac{1}{4}$ m

Q6. Lipika reads a book for $1\frac{3}{4}$ hours everyday. She reads the entire book in 6 days. How many hours in all were required by her to read the book?

Ans:

Number of hours Lipika reads the book per day

$=1\frac{3}{4} \ =\frac{7}{4}$ hours

Number of days = 6

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

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

Q7. A car runs 16 km using 1 litre of petrol. How much distance will it cover using $2\frac{3}{4}$ litres of petrol.

Ans:

Number of kms a car can run per litre petrol = 16 km

Quantity of petrol $=2\frac{3}{4}\ \text{L}=\frac{11}{4}\ \text{L}$

Number of kms a car can run for $\frac{11}{4}$ litre petrol = $\frac{11}{4}\times 16 = 44$ km

It will cover 44 km distance by using $2\frac{3}{4}$ litres of petrol.

Q8. (a) (i) Provide the number in the box□, such that $\frac{2}{3}\times\square=\frac{10}{30}$.

(ii) The simplest form of the number obtained in □ is _____.

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

(ii) The simplest form of the number obtained in □ is _____.

Ans:

(a) (i) As $\frac{2}{3}\times\frac{5}{10}=\frac{10}{30}$,

Therefore, the number in the box□, such that $\frac{2}{3}\times\square=\frac{10}{30}$ is

$\frac{5}{10}$.

(ii) The simplest form of $\frac{5}{10}$ is $\frac{1}{2}$.

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

Therefore, the number in the box□, such that $\frac{3}{5}\times\square=\frac{24}{75}$ is

$\frac{8}{15}$.

(ii) As $\frac{8}{15}$ cannot be further simplified, therefore, its simplest form is $\frac{8}{15}$

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