CLASS NOTES-ANSWERS

EXERCISE 2.3

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. $\frac{3}{10}$

Answer:

(i) 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. $\frac{1}{4}$ of $\frac{4}{3} = \frac{1}{4} \times \frac{4}{3} = \frac{4}{12} = \frac{1}{3}$

(ii) 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. $\frac{1}{7}$ 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) $\frac{2}{3} \times 2\frac{2}{3} = \frac{2}{3} \times \frac{8}{3} = \frac{16}{9} = 1\frac{7}{9}$

(ii) $\frac{2}{7} \times \frac{7}{9} = \frac{2 \times 7}{7 \times 9} = \frac{2}{9}$

(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) $\frac{1}{3} \times \frac{15}{8} = \frac{15}{24} = \frac{5}{8}$

(vi) $\frac{11}{2} \times \frac{3}{10} = \frac{33}{20} = 1\frac{13}{20}$

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

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

Answer:

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

(ii) $6\ \frac{2}{5} \times \frac{7}{9} = \frac{32}{5} \times \frac{7}{9} = \frac{224}{45} = 4\ \frac{44}{45}$

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

(iv) $\frac{5}{6} \times 2\ \frac{3}{7} = \frac{5}{6} \times \frac{17}{7} = \frac{85}{42} = 2\ \frac{1}{42}$

(v) $3\ \frac{2}{5} \times \frac{4}{7} = \frac{17}{5} \times \frac{4}{7} = \frac{68}{35} = 1\ \frac{33}{35}$

(vi) $2\ \frac{3}{5} \times 3 = \frac{13}{5} \times 3 = \frac{39}{5} = 7\ \frac{4}{5}$

(vii) $3\ \frac{4}{7} \times \frac{3}{5} = \frac{25}{7} \times \frac{3}{5} = \frac{15}{7} = 2\ \frac{1}{7}$

4. 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 $\frac{3}{7}$

Answer:

(i) $\frac{2}{7}$ of $\frac{3}{4} = \frac{2}{7} \times \frac{3}{4} = \frac{3}{14} = \frac{3 \times 4}{14 \times 4} = \frac{12}{56}$

$\frac{3}{5}$ of $\frac{5}{8} = \frac{3}{5} \times \frac{5}{8} = \frac{3}{8} = \frac{3 \times 7}{8 \times 7} = \frac{21}{56}$

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

So, $\frac{3}{5}$ of $\frac{5}{8} > \frac{2}{7}$ of $\frac{3}{4}$

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

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

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

So, $\frac{1}{2}$ of $\frac{6}{7} > \frac{2}{3}$ of $\frac{3}{7}$

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.

Answer: Total number of saplings = 4

Distance between two adjacent saplings = $\frac{3}{4}$ m

Distance between the first and the last sapling = $\frac{3}{4} + \frac{3}{4} + \frac{3}{4}$

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

$= \frac{9}{4}$ m

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

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

6. 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?

Answer: Number of hours taken by Lipika to read a book everyday

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

Number of days taken to read the entire book= 6 days

Total number of hours required by her to read the book

$= \frac{7}{4} \times 6 = \frac{42}{4} = \frac{21}{2} = 10\frac{1}{2}$ hours.

Thus, $10\frac{1}{2}$ hours in all were required by Lipika to read the book.

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: Distance covered by the car using 1 liter of petrol = 16 km

Distance covered by using $2\frac{3}{4}$ litres of petrol = $2\frac{3}{4} \times 16$

$= \frac{11}{4} \times 16$

$= 11 \times 4$

$= 44$ km

Thus, distance covered by car using $2\frac{3}{4}$ litres of petrol is 44 km.

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 _____.

Answer:

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

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

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

The simplest form of $\frac{8}{15}$ is $\frac{8}{15}$ itself.