Ex — 25

1. "A cloth merchant sold $75\frac{1}{2}$ m of cloth on a day."

He sold $36\frac{3}{4}$ m of cloth the next day.

He sold $\left(75\frac{1}{2} + 36\frac{3}{4}\right) = \left(\frac{151}{2} + \frac{147}{4}\right) = \left(\frac{302+147}{4}\right) = \frac{449}{4}$

$= 112\frac{1}{4}$ m of cloth in all in those two days.

2. Four ~~biscuit~~ suitcases weigh $10\frac{3}{4}$ kg, $12\frac{1}{2}$ kg, $13\frac{1}{5}$ kg

and $14\frac{1}{4}$ kg respectively.

A porter carries all the suitcases.

~~The porter carr~~

∴ The total weight carried by the porter is $\left(10\frac{3}{4} + 12\frac{1}{2} + 13\frac{1}{5} + 14\frac{1}{4}\right)$

$= \left(\frac{43}{4} + \frac{25}{2} + \frac{66}{5} + \frac{57}{4}\right) = \left(\frac{43+57+50}{4} + \frac{66}{5}\right) = \left(\frac{150}{4} + \frac{66}{5}\right)$

$= \left(\frac{750+264}{20}\right) = \frac{1014}{20} = \frac{507}{10} = 50\frac{7}{10}$ kg

3. A rope is $5\frac{2}{3}$ m $= \frac{17}{3}$ m long.

It is cut into two pieces.

The length of one piece is $2\frac{1}{4}$ m $= \frac{9}{4}$ m.

∴ The length of the other piece is $\left(\frac{17}{3} - \frac{9}{4}\right) = \left(\frac{68-27}{12}\right) = \frac{41}{4}$

$= 10\frac{1}{4}$ m

4. A milk man has 20 L of milk.

He sells $15\frac{3}{5}$ L $= \frac{78}{5}$ L of milk.

$\left(20 - \frac{78}{5}\right) = \left(\frac{100-78}{5}\right) = \frac{22}{5} = 4\frac{2}{5}$ L of milk is left to be sold.

5. The price of 1 kg of sugar is Rs $14\frac{1}{2}$ = Rs. $\frac{29}{2}$.

∴ The price of $3\frac{1}{4} = \frac{13}{4}$ kg of sugar will be $\left(\frac{29}{2} \times \frac{13}{4}\right)$

$= \frac{377}{8}$ = Rs. $47\frac{1}{8}$

6. $5\frac{1}{9} = \frac{46}{9}$ L of petrol costs ₹ 92.

∴ The cost of 1 L of petrol is $\left(92 \div \frac{46}{9}\right) = \left(\overset{2}{\cancel{92}} \times \frac{9}{\cancel{46}}\right)$ = ₹ 18

7. The product of two fractional numbers is $7\frac{1}{3} = \frac{22}{3}$.

One of them is $1\frac{5}{6} = \frac{11}{6}$.

∴ The other number is $\left(\frac{22}{3} \div \frac{11}{6}\right) = \left(\frac{\overset{2}{\cancel{22}}}{3} \times \frac{\overset{2}{\cancel{6}}}{\cancel{11}}\right) = 4$

8. A man sold $\frac{1}{2}$ of his land.

He gave $\frac{1}{2}$ of the remaining portion to his son and $\frac{1}{3}$ of the balance to his daughter.

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

∴ $\left(\frac{1}{2} - \frac{1}{3}\right) = \left(\frac{3-2}{6}\right) = \frac{1}{6}$ of his land is left with him.

9.

The length of a line segment AB is $\frac{2}{3}$ of the length of the line segment CD.

$$CD = 4 \, cm \qquad \therefore AB = 4 \times \frac{2}{3} = \frac{8}{3} \, cm$$

The length of a line segment EF is $\frac{3}{8}$ of the length of the line segment AB.

$$AB = \frac{8}{3} \, cm \qquad \therefore EF = \frac{\overset{1}{\cancel{8}}}{\cancel{3}} \times \frac{\overset{1}{\cancel{3}}}{\cancel{8}} = 1 \, cm$$

$\therefore \quad \frac{1}{4}$ of the length of CD is equal to the length of EF.

10.

There are 800 students in a school.

$\frac{1}{10}$ of the students were absent on a day.

$$\therefore \left(\overset{80}{\cancel{800}} \times \frac{1}{\cancel{10}} \right) = 80 \text{ students were absent.}$$

$$\therefore (800 - 80) = 720 \text{ students were present that day.}$$

$$\therefore \frac{\overset{9}{\cancel{720}}}{\underset{10}{\cancel{800}}} = \frac{9}{10} \text{ of the students } \cancel{\text{were}} \text{ present that day.}$$

11.

There are 572 examinees.

$\frac{3}{11}$ of the total number of examinees appears in part 1.

$$\therefore \left(\overset{52}{\cancel{572}} \times \frac{3}{\cancel{11}} \right) = 156 \text{ examinees appear in part 1.}$$

$\frac{3}{13}$ appears in part 2.

$$\therefore \left(\overset{44}{\cancel{572}} \times \frac{3}{\cancel{13}} \right) = 132 \text{ examinees appear in part 2.}$$

The rest appear in both the parts.

$$\therefore \{572 - (156 + 132)\} = 284 \text{ examinees appear in both}$$

parts.

12. A man has Rs. 480 in first bundle of notes and Rs. 300 in other bundle.

He gives $\frac{1}{4}$ of first bundle and $\frac{1}{3}$ of other bundle to Bunty.

∴ Bunty received total $= \left\{ \left(\overset{120}{\cancel{480}} \times \frac{1}{4} \right) + \left(\overset{100}{\cancel{300}} \times \frac{1}{3} \right) \right\}$

$$= \{ 120 + 100 \} = Rs. 220$$

He gives $\frac{1}{3}$ of first bundle and $\frac{1}{5}$ of other bundle to Binny.

∴ Binny received total $= \left\{ \left(\overset{160}{\cancel{480}} \times \frac{1}{3} \right) + \left(\overset{60}{\cancel{300}} \times \frac{1}{5} \right) \right\}$

$$= \{ 160 + 60 \} = Rs. 220$$

∴ Bunty and Binny, both received same amount of money.

13. Kanchan spends $\frac{1}{2}$ of her money in one shop.

She spends $\frac{1}{3}$ of remaining ~~wit~~ on rickshaw fare.

∴ She spends $\left(\frac{1}{3} \times \frac{1}{2} \right) = \frac{1}{6}$ on rickshow fare.

At the end, she has Rs 20. $\left(\frac{1}{2} - \frac{1}{6} = \frac{2}{6} = \frac{1}{3} \right)$

∴ She had in the beginning $=$

∴ At the end, she has $\left(\frac{1}{2} - \frac{1}{3} \right) = \frac{3-2}{6} = \frac{1}{6}$

∴ $\frac{1}{6} = 20$, or $1 = 20 \times 6 = 120$

∴ She had in the beginning Rs. 120.

15. The distance between two stations is 25 km.

A train starts from one station and goes 15 km towards the other station.

∴ $(25 - 15) = 10$ km between the two stations remains to be covered.

∴ $\frac{2\cancel{10}}{\cancel{25}5} = \frac{2}{5}$ of the distance between the two stations remains to be covered.

14. A boy reads $\frac{1}{4}$ of a book on the first day and on second day he reads $\frac{1}{3}$ of the remaining portion.

∴ The remaining portion is $\left(1-\frac{1}{4}\right) = \frac{3}{4}$

∴ On Second day he reads $\left(\frac{3}{4} \times \frac{1}{3}\right) = \frac{1}{4}$

∴ In the two days, the boy reads $\left\{1-\left(\frac{1}{4}+\frac{1}{4}\right)\right\} = \left\{1-\frac{2}{4}\right\}$

$= \frac{2}{4} = \frac{1}{2}$ of a book.

If 100 pages are left to be read, then $(100 \times 2) = 200$ pages are there in the book.

16. A train travels $45\frac{1}{3}$ km every hour for the first $3\frac{1}{2}$ hours after leaving a station.

∴ The first $3\frac{1}{2}$ hours, the train travels $\left(\frac{\overset{68}{\cancel{136}}}{3} \times \frac{7}{\cancel{2}}\right)$ km

$= \frac{476}{3}$ km

It travels $50\frac{1}{2}$ km every hour for the next $2\frac{1}{2}$ hours.

∴ Next $2\frac{1}{2}$ hours, the train travels $\left(\frac{101}{2} \times \frac{5}{2}\right)$ km

$= \frac{505}{4}$ km

∴ During the six hours, the train travels $\left(\frac{476}{3} + \frac{505}{4}\right)$ km

$= \left(\frac{1904+1515}{12}\right)$ km

$= \frac{3419}{12} = 284\frac{11}{12}$ km

17. In a colony, Two-thirds of the vehicles are scooters, three-fourths of the remaining are cycles.

∴ $\frac{3}{3}\left(1-\frac{2}{3}\right) = \frac{1}{3}$ is the remaining.

∴ $\left(\frac{1}{3} \times \frac{3}{4}\right) = \frac{1}{4}$ are cycles

∴ $\left\{1-\left(\frac{2}{3}+\frac{1}{4}\right)\right\} = \left\{1-\frac{5}{12}\right\} = \frac{7}{12}$ are of the vehicles are car.

17.   If the total number of vehicles is 4836. then there in

the colony , $\left(4836 \times \dfrac{1}{12}\right) = 2821$ are cars.

18.   A smaller vessel can contain $\dfrac{2}{25}$ of the amount of oil

contained in the larger vessel.

   Oil is taken out from the larger vessel ten times by filling

the smaller vessel.

$\therefore \left\{1 - \left(\dfrac{2}{25} \times 10\right)\right\} = \left\{1 - \dfrac{4}{5}\right\} = \left\{\dfrac{5-4}{5}\right\} = \dfrac{1}{5}$ of oil is left

in the larger vessel.