

other number = ?

$$9\frac{4}{5} \times \text{other number} = 42$$

$$\therefore \text{other number} = 42 \div 9\frac{4}{5}$$

$$= 42 \div \frac{49}{5}$$

$$= 42 \times \frac{5}{49}$$

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

$$= \frac{30}{7} = 4\frac{2}{7}$$

$\therefore 9\frac{4}{5}$ should be multiplied by

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$$\begin{aligned} \text{x)} \quad \frac{3}{11} \times \frac{22}{6} \times \frac{2}{5} &= \left(\frac{3}{11} \times \frac{22}{6} \right) \times \frac{2}{5} \\ &= \frac{2}{1} \times \frac{2}{5} \\ &= \frac{1 \times 2}{1 \times 5} = \frac{2}{5} \checkmark \end{aligned}$$

2. simplify:

$$\begin{aligned} \text{i)} \quad 56 \div 2\frac{3}{7} &= 56 \div \frac{17}{7} = 56 \times \frac{7}{17} \\ &= \frac{392}{17} \\ &= 23\frac{1}{17} \checkmark \end{aligned}$$

$$\begin{aligned} \text{ii)} \quad \frac{32}{49} \times 8\frac{1}{4} \times 4\frac{1}{11} \times 1\frac{2}{5} \\ &= \left(\frac{32}{49} \times \frac{33}{11} \right) \times \left(\frac{48}{11} \times \frac{7}{5} \right) \\ &= \frac{8}{49} \times \left(\frac{33}{1} \times \frac{9}{11} \right) \times \frac{7}{1} \\ &= \frac{8}{49} \times \frac{3}{1} \times \frac{9}{1} \times \frac{7}{1} \\ &= \frac{8}{7} \times 3 \times 9 \times 1 \\ &= \frac{8 \times 3 \times 9}{7} \\ &= \frac{216}{7} \\ &= 30\frac{6}{7} \checkmark \end{aligned}$$

$$= \frac{3}{7} \text{ of the students.}$$

\therefore No. of Girls in the school = $\frac{3}{7}$ of Number of students in the school.

$$\therefore 210 = \frac{3}{7} \times \text{Number of students.}$$

$$\begin{aligned}\therefore \text{Number of students} &= 210 \div \frac{3}{7} \\ &= 210 \times \frac{7}{3} \\ &= 490\end{aligned}$$

$$\begin{aligned}\therefore \text{Number of Boys in the school} &= \text{No. of students} - \text{No. of Girls.} \\ &= 490 - 210 = 280.\end{aligned}$$

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14. product of two numbers = $15\frac{5}{6}$.

one of the numbers = $6\frac{1}{3}$

other number = ?

one number \times other number = $15\frac{5}{6}$.

$$6\frac{1}{3} \times \text{other number} = \frac{95}{6}$$

$$\text{other number} = \frac{95}{6} \div 6\frac{1}{3}$$

$$= \frac{95}{6} \div \frac{19}{3}$$

$$= \frac{95}{6} \times \frac{3}{19}$$

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

\therefore other number = $2\frac{1}{2}$ ✓

15. product of numbers = 42

one number = $9\frac{4}{5}$

other number = ?

$$9\frac{4}{5} \times \text{other number} = 42$$

$$\therefore \text{other number} = 42 \div 9\frac{4}{5}$$

$$= 42 \div \frac{49}{5}$$

$$= 42 \times \frac{5}{49}$$

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

$$= \frac{30}{7} = 4\frac{2}{7}$$

$\therefore 9\frac{4}{5}$ should be multiplied by $4\frac{2}{7}$

X) $\frac{3}{11} \times \frac{22}{6} \times \frac{2}{5} = \left(\frac{3}{11} \times \frac{22}{6} \right) \times \frac{2}{5}$

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

42

$$= \frac{64}{20} \text{ m} = 3\frac{1}{20} \text{ m} \checkmark$$

11.

Total Weight of toffees = $30\frac{3}{8}$ kg

Weight of each packet = $2\frac{1}{40}$ kg

\therefore No. of packets Sumit can make = $30\frac{3}{8} \div 2\frac{1}{40}$

$$= \frac{243}{8} \div \frac{81}{40}$$

$$= \frac{243}{8} \times \frac{40}{81}$$

$$= 3 \times 5$$

$$= 15 \checkmark$$

12.

perimeter of the square = $9\frac{1}{11}$ m 

But, perimeter of the square = $4 \times \text{side}$.

$$\therefore 9\frac{1}{11} \text{ m} = 4 \times \text{side}$$

$$\therefore \text{side of the square} = 9\frac{1}{11} \div 4$$

$$= \frac{100}{11} \text{ m} \div 4$$

$$= \frac{100}{11} \times \frac{1}{4} \text{ m}$$

$$= \frac{25}{11} \text{ m} = 2\frac{3}{11} \text{ m}$$

Now, Area of the square = side \times side.

$$= \frac{25}{11} \text{ m} \times \frac{25}{11} \text{ m}$$

$$= \frac{625}{121} \text{ m}^2$$

$$= 5\frac{20}{121} \text{ m}^2 \checkmark$$

13) 40 Boys in the school = $\frac{4}{7}$ of the students.

\therefore Girls in the school = $(1 - \frac{4}{7})$ of the students

$$= \frac{3}{7} \text{ of the students}$$

\therefore No. of Girls in the school = $\frac{3}{7}$ of Number of students in the school.

$$\therefore 210 = \frac{3}{7} \times \text{Number of students}$$

$$\therefore \text{Number of students} = 210 \div \frac{3}{7}$$

$$= 210 \times \frac{7}{3}$$

$$= 490$$

\therefore Number of Boys in the school = No. of students - No. of Girls.
 $= 490 - 210 = 280 \checkmark$

$$\begin{aligned} \therefore \text{Time required to cover 1 km} &= 1 \text{ hour} \div \frac{91}{2} \\ &= 1 \text{ hour} \times \frac{2}{91} \\ &= \frac{2}{91} \text{ hours.} \end{aligned}$$

$$\begin{aligned} \therefore \text{Time required to cover } 256 \frac{31}{50} \text{ km} &= 256 \frac{31}{50} \times \frac{2}{91} \text{ hours} \\ &= \frac{141}{50 \cdot 25} \times \frac{2}{91} \text{ hours.} \\ &= \frac{141}{25} \text{ hours.} \quad 66/783 \\ &= 5 \frac{16}{25} \text{ hours.} \end{aligned}$$

10. Total length of rope = $58 \frac{13}{20}$ m
 No. of equal lengths of ropes cut = 17
 \therefore length of each piece = $58 \frac{13}{20} \text{ m} \div 17$

$$\begin{aligned} &= \frac{1173}{20} \text{ m} \div 17 \\ &= \frac{1173}{20} \text{ m} \times \frac{1}{17} \\ &= \frac{1173}{20 \times 17} \text{ m} \\ &= \frac{69}{20} \text{ m} = 3 \frac{9}{20} \text{ m} \checkmark \end{aligned}$$

11. Total weight of toffees = $30 \frac{3}{8}$ kg
 Weight of each packet = $2 \frac{1}{40}$ kg
 \therefore No. of packets Sumit can make = $30 \frac{3}{8} \div 2 \frac{1}{40}$

$$\begin{aligned} &= \frac{243}{8} \div \frac{81}{40} \\ &= \frac{243}{8} \times \frac{40}{81} \\ &= 3 \times 5 \\ &= 15 \checkmark \end{aligned}$$

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

$$= ₹ \frac{2809}{8}$$

$$= ₹ 351 \frac{1}{8} \checkmark$$

Sameer should pay ₹ 351 $\frac{1}{8}$ to the shopkeeper

8. Cost of 6 $\frac{1}{2}$ m of lace = ₹ 115 $\frac{3}{8}$

$$\therefore \text{Cost of 1 m of lace} = ₹ 115 \frac{3}{8} \div 6 \frac{1}{2}$$

$$= ₹ \frac{923}{8} \div \frac{13}{2}$$

$$= ₹ \frac{923}{8} \times \frac{2}{13}$$

$$= ₹ \frac{71}{4} = ₹ 17 \frac{3}{4} \checkmark$$

$$\therefore \text{Cost of 1 m lace} = ₹ 17 \frac{3}{4}$$

9. Distance covered in 9 $\frac{1}{2}$ hours = 432 $\frac{1}{4}$ km

$$\therefore \text{Distance covered in 1 hour} = 432 \frac{1}{4} \text{ km} \div 9 \frac{1}{2}$$

$$= \frac{1729}{4} \text{ km} \div \frac{19}{2}$$

$$= \frac{1729}{4} \times \frac{2}{19} \text{ km.}$$

$$= \frac{91}{2} \text{ km}$$

$$\therefore \text{Distance covered in } 6 \frac{1}{2} \text{ hours}$$

$$= \frac{91}{2} \times 6 \frac{1}{2} \text{ km.}$$

$$= \frac{91}{2} \times \frac{13}{2} \text{ km.}$$

$$= \frac{1183}{4} \text{ km.}$$

$$= 295 \frac{3}{4} \text{ km.} \checkmark$$

$$\text{Distance covered in 1 hour} = \frac{91}{2} \text{ km.}$$

i.e. Time required to cover $\frac{91}{2}$ km = 1 hour

$$\therefore \text{Time required to cover 1 km} = 1 \text{ hour} \div \frac{91}{2}$$

$$= 1 \text{ hour} \times \frac{2}{91}$$

$$= \frac{2}{91} \text{ hours.}$$

$$= \frac{777}{41} \times \frac{4}{33}$$

$$= \frac{777}{33}$$

$$\therefore \text{Cost of } 3\frac{3}{4} \text{ Kg of tomatoes} = \frac{777}{33} \times 3\frac{3}{4}$$

$$= \frac{777}{33} \times \frac{15}{4}$$

$$= \frac{11655}{132} = \text{₹ } 88\frac{39}{132} = \text{₹ } 88\frac{13}{44}$$

6. Capacity of Tank = $28\frac{1}{8} \text{ l}$

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Capacity of Jar = $2\frac{1}{4} \text{ l}$

$$\therefore \text{No. of Jars can be filled} = 28\frac{1}{8} \text{ l} \div 2\frac{1}{4} \text{ l}$$

$$= \frac{225}{8} \text{ l} \div \frac{9}{4} \text{ l}$$

$$= \frac{225}{8} \times \frac{4}{9}$$

$$= \frac{25}{2} = 12\frac{1}{2} \checkmark$$

$\therefore 12\frac{1}{2}$ Jars can be filled.

7. Cost of $18\frac{1}{2} \text{ m}$ of cloth = ₹ $245\frac{1}{8}$

$$\therefore \text{Cost of } 1 \text{ m of cloth} = \text{₹ } 245\frac{1}{8} \div 18\frac{1}{2} \text{ m}$$

$$= \text{₹ } \frac{1961}{8} \div \frac{37}{2}$$

$$= \text{₹ } \frac{1961}{8} \times \frac{2}{37}$$

$$= \text{₹ } \frac{53}{4}$$

$$\therefore \text{Cost of } 26\frac{1}{2} \text{ m of same cloth} = \text{₹ } \frac{53}{4} \times 26\frac{1}{2}$$

$$= \text{₹ } \frac{53}{4} \times \frac{53}{2}$$

$$= \text{₹ } \frac{2809}{8}$$

$$= \text{₹ } 351\frac{1}{8} \checkmark$$

Sameer should pay ₹ $351\frac{1}{8}$ to the shopkeeper.

8. Cost of $6\frac{1}{2} \text{ m}$ of lace = ₹ $115\frac{3}{8}$

$$\therefore \text{Cost of } 1 \text{ m of lace} = \text{₹ } 115\frac{3}{8} \div 6\frac{1}{2}$$

$$= \text{₹ } \frac{923}{8} \div \frac{13}{2}$$

$$= \text{₹ } \frac{923}{8} \times \frac{2}{13}$$

$$= \text{₹ } 71 = \text{₹ } 17\frac{3}{4} \checkmark$$

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$$= \frac{325}{2} \text{ sq.m}$$

$$\text{Length of rectangle} = 16\frac{2}{3} \text{ m} = \frac{50}{3} \text{ m}$$

We know that, Area of rectangle = length \times breadth

$$\therefore \frac{325}{2} \text{ sq.m} = \frac{50}{3} \text{ m} \times \text{breadth}$$

$$\therefore \text{Breadth} = \frac{325}{2} \text{ sq.m} \div \frac{50}{3} \text{ m}$$

$$= \frac{\overset{65}{\cancel{325}}}{2} \times \frac{3}{\underset{10}{\cancel{50}}} \text{ m} \quad 63/783 \quad \overset{34}{}$$

$$= \frac{13 \times 3}{2 \times 2} \text{ m} = \frac{39}{4} \text{ m} = 9\frac{3}{4} \text{ m.}$$

4.

$$\text{product of two numbers} = \frac{4}{9}$$

$$\text{one of the two numbers} = \frac{7}{17}$$

$$\text{other number} = ?$$

$$\text{product} = \frac{7}{17} \times \text{other number.}$$

$$\frac{4}{9} = \frac{7}{17} \times \text{other number.}$$

$$\therefore \text{other number} = \frac{4}{9} \div \frac{7}{17}$$

$$= \frac{4}{9} \times \frac{17}{7} = \frac{68}{63} = 1\frac{5}{63}$$

5.

$$\text{cost of } 8\frac{1}{4} \text{ Kg of tomatoes} = ₹ 194\frac{1}{4}$$

$$\therefore \text{cost of 1 Kg of tomatoes} = ₹ 194\frac{1}{4} \div 8\frac{1}{4}$$

$$= ₹ \frac{777}{4} \div \frac{33}{4}$$

$$= ₹ \frac{777}{\cancel{4}_1} \times \frac{\cancel{4}^1}{33}$$

$$= ₹ \frac{777}{33}$$

$$\therefore \text{Cost of } 3\frac{3}{4} \text{ Kg of tomatoes} = ₹ \frac{777}{33} \times 3\frac{3}{4}$$

$$= ₹ \frac{777}{33} \times \frac{15}{4}$$

$$= ₹ \frac{11,655}{132} = ₹ 88\frac{39}{132} = ₹ 88\frac{13}{44}$$

$$= \frac{396}{7} \text{ Kg} \div 18$$

$$= \frac{396}{7} \times \frac{1}{18} \text{ Kg}$$

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$$= \frac{22}{7} \text{ Kg} = \frac{22}{7} \text{ Kg.}$$

\therefore capacity of each bag = $\frac{22}{7}$ Kg.

Total quantity of cement to be packed

$$= 78 \frac{4}{7} \text{ Kg} = \frac{550}{7} \text{ Kg}$$

\therefore No. of bags required = $\frac{550}{7} \text{ Kg} \div \frac{22}{7} \text{ Kg}$

$$= \frac{550}{7} \times \frac{7}{22}$$

$$= \frac{50}{2} = 25 \checkmark$$

\therefore 25 bags required to pack $78 \frac{4}{7}$ Kg cement

3. Area of rectangle = $162 \frac{1}{2} \text{ sq. m}$

$$= \frac{325}{2} \text{ sq. m}$$

$$\text{Length of rectangle} = 16 \frac{2}{3} \text{ m} = \frac{50}{3} \text{ m}$$

We know that, Area of rectangle = length \times breadth

$$\therefore \frac{325}{2} \text{ sq. m} = \frac{50}{3} \text{ m} \times \text{breadth}$$

$$\therefore \text{Breadth} = \frac{325}{2} \text{ sq. m} \div \frac{50}{3} \text{ m}$$

$$= \frac{65}{2} \times \frac{3}{10} \text{ m}$$

$$= \frac{13 \times 3}{2 \times 2} \text{ m} = \frac{39}{4} \text{ m} = 9 \frac{3}{4} \text{ m.}$$

4. product of two numbers = $\frac{4}{9}$

$$= \left[17\frac{1}{2} \times 8\frac{1}{2} \right] \div 9\frac{1}{2} = \left[\frac{35}{2} \times \frac{17}{2} \right] \div \frac{19}{2}$$

$$= \frac{595}{42} \times \frac{2}{19} = \frac{595}{38} = 15\frac{25}{38}$$

25.

$$\left[8\frac{2}{5} \times 7\frac{2}{5} \right] \div \frac{6}{25}$$

$$= \left[\frac{42}{5} \times \frac{37}{5} \right] \times \frac{25}{6}$$

$$= \frac{42 \times 37}{25} \times \frac{25}{6}$$

$$= \frac{742 \times 37}{6}$$

$$= \frac{7 \times 37}{1} = 259 \checkmark$$

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EXERCISE - 2.6

1. Amount of milk with milkman = $25\frac{1}{5}$ l

No. of bottles filled = 14

\therefore capacity of each bottle = $25\frac{1}{5}$ l \div 14

$$= \frac{126}{5} \text{ l} \div 14$$

$$= \frac{126}{5} \text{ l} \times \frac{1}{14}$$

$$= \frac{18}{10} \text{ l} = \frac{9}{5} \text{ l} = 1\frac{4}{5}$$

\therefore capacity of each bottle = $1\frac{4}{5}$ l. \checkmark

2. Total quantity of cement = $56\frac{4}{7}$ kg

No. of bags packed = 18

\therefore capacity of each bag = $56\frac{4}{7}$ kg \div 18

$$= \frac{396}{7} \text{ kg} \div 18$$

$$= \frac{396}{7} \times \frac{1}{18} \text{ kg}$$

$$= \frac{44}{7} \text{ kg} = \frac{22}{7} \text{ kg}$$

\therefore capacity of each bag = $\frac{22}{7}$ kg.

Total quantity of cement to be packed

$$\begin{aligned}
 \underline{21.} \quad (24 \div 2\frac{2}{3}) \div 3\frac{1}{9} &= (24 \div \frac{8}{3}) \div \frac{28}{9} \\
 &= (\cancel{24}^3 \times \frac{3}{\cancel{8}_1}) \times \frac{9}{28} \\
 &= \frac{3 \times 3}{1} \times \frac{9}{28} \\
 &= \frac{81}{28} = 2\frac{25}{28} \checkmark
 \end{aligned}$$

$$\begin{aligned}
 \underline{22.} \quad [7 \div 2\frac{2}{5}] \times [\frac{5}{9} \div 9\frac{4}{9}] \\
 &= [7 \div \frac{12}{5}] \times [\frac{5}{9} \div \frac{85}{9}] \\
 &= [7 \times \frac{5}{12}] \times [\frac{\cancel{5}^1}{9^1} \times \frac{9^1}{\cancel{85}_{17}}] \\
 &= \frac{35}{12} \times \frac{1}{17} = \frac{35}{204} \checkmark
 \end{aligned}$$

$$\begin{aligned}
 \underline{23.} \quad [\frac{2}{15} \div \frac{24}{45}] \times 1\frac{1}{4} &= [\frac{\cancel{2}^1}{15} \times \frac{\cancel{45}^3}{\cancel{24}_{12}}] \times \frac{5}{4} \\
 &= [\frac{1 \times 3}{1 \times 12}] \times \frac{5}{4} \\
 &= \frac{1}{4} \times \frac{5}{4} = \frac{5}{16} \checkmark
 \end{aligned}$$

$$\begin{aligned}
 \underline{24.} \quad [17\frac{1}{2} \times 8\frac{1}{2}] \div 9\frac{1}{2} &= [\frac{35}{2} \times \frac{17}{2}] \div \frac{19}{2} \\
 &= \frac{595}{42} \times \frac{2^1}{19} = \frac{595}{38} = 15\frac{25}{38}
 \end{aligned}$$

$$\begin{aligned}
 \underline{25.} \quad [8\frac{2}{5} \times 7\frac{2}{5}] \div \frac{6}{25} \\
 &= [\frac{42}{5} \times \frac{37}{5}] \times \frac{25}{6} \\
 &= \frac{42 \times 37}{\cancel{25}_1} \times \frac{\cancel{25}^1}{6} \\
 &= \frac{742 \times 37}{6} \\
 &= \frac{7 \times 37}{1} = 259 \checkmark
 \end{aligned}$$

$$15. 36\frac{1}{4} \div 8\frac{3}{4} = \frac{145}{4} \div \frac{35}{4} = \frac{145}{4} \times \frac{4}{35} = \frac{29}{7} = 4\frac{1}{7}$$

$$16. \left(\frac{1}{5} \times \frac{16}{7}\right) \div \frac{2}{3} = \left(\frac{16}{35} \times \frac{4}{7}\right) \times \frac{3}{2} = \frac{3 \times 4}{1 \times 1} \times \frac{3}{2} = \frac{12 \times 3}{2} = 18$$

$$17. \left(18\frac{2}{9} \div 9\frac{1}{9}\right) \div 1\frac{1}{3} = \left(\frac{164}{9} \div \frac{82}{9}\right) \div \frac{4}{3}$$

$$= \left(\frac{164}{9} \times \frac{9}{82}\right) \div \frac{4}{3}$$

$$= \left(\frac{2 \times 1}{1 \times 1}\right) \times \frac{3}{4} \quad 59/783$$

$$= \frac{2}{1} \times \frac{3}{4} = \frac{3}{2} = 1\frac{1}{2} \checkmark$$

$$18. \left(2\frac{1}{7} \times 2\frac{4}{5}\right) \div \frac{1}{10} = \left(\frac{15}{7} \times \frac{14}{5}\right) \div \frac{1}{10}$$

$$= \left(\frac{3 \times 2}{1 \times 1}\right) \times \frac{10}{1}$$

$$= \frac{6}{1} \times \frac{10}{1} = 60 \checkmark$$

$$19. \left[\frac{2}{7} \div \frac{40}{21}\right] \times \left[\frac{3}{10} \div \frac{9}{20}\right]$$

$$= \left[\frac{2}{7} \times \frac{21}{40}\right] \times \left[\frac{3}{10} \times \frac{20}{9}\right]$$

$$= \left[\frac{1 \times 3}{1 \times 20}\right] \times \left[\frac{1 \times 2}{1 \times 3}\right]$$

$$= \frac{3}{20} \times \frac{2}{3} = \frac{1 \times 2}{20 \times 1} = \frac{1}{10} \checkmark$$

$$(20) \left[\frac{4}{15} \times \frac{6}{28}\right] \times \frac{9}{2} = \frac{4 \times 6}{15 \times 28} \times \frac{9}{2} = \frac{1 \times 2}{5 \times 7} \times \frac{9}{2}$$

$$= \frac{2}{35} \times \frac{9}{2} = \frac{1 \times 9}{35 \times 1} = \frac{9}{35} \checkmark$$

$$21. \left(24 \div 2\frac{2}{3}\right) \div 3\frac{1}{9} = \left(24 \div \frac{8}{3}\right) \div \frac{28}{9}$$

$$= \left(24 \times \frac{3}{8}\right) \times \frac{9}{28}$$

$$= \frac{3 \times 3}{1} \times \frac{9}{28}$$

$$= \frac{81}{28} = 2\frac{25}{28} \checkmark$$

$$22. \left[7 \div 9\frac{2}{3}\right] \times \left[\frac{5}{9} \div 9\frac{4}{9}\right]$$

$$2. \quad 6 \div \frac{9}{5} = 6 \times \frac{5}{9} = \frac{6 \times 5}{9 \times 3} = \frac{2 \times 5}{3} = \frac{10}{3} = 3\frac{1}{3}$$

$$3. \quad \frac{5}{8} \div 3 = \frac{5}{8} \times \frac{1}{3} = \frac{5 \times 1}{8 \times 3} = \frac{5}{24} \checkmark$$

$$4. \quad \frac{6}{11} \div 15 = \frac{6}{11} \times \frac{1}{15} = \frac{6 \times 1}{11 \times 15 \times 5} = \frac{2}{55} \checkmark$$

$$5. \quad 6\frac{4}{5} \div \frac{7}{35} = \frac{34}{5} \div \frac{7}{35} = \frac{34}{5} \times \frac{35}{7} = 34 \times \frac{7}{1} = 238 \quad \text{[29]}$$

$$6. \quad \frac{16}{7} \div \frac{28}{42} = \frac{16}{7} \times \frac{42}{28} = \frac{8 \times 3}{1 \times 7} = \frac{24}{7} = 3\frac{3}{7}$$

$$7. \quad \frac{8}{27} \div \frac{16}{9} = \frac{8}{27} \times \frac{9}{16} = \frac{1 \times 1}{3 \times 2} = \frac{1}{6} \checkmark$$

$$8. \quad \frac{9}{35} \div \frac{1}{7} = \frac{9}{35} \times \frac{7}{1} = \frac{9 \times 1}{5 \times 1} = \frac{9}{5} = 1\frac{4}{5}$$

$$9. \quad \frac{4}{169} \div \frac{8}{13} = \frac{4}{169} \times \frac{13}{8} = \frac{1 \times 1}{13 \times 2} = \frac{1}{26} \checkmark$$

$$10. \quad 25\frac{1}{2} \div \frac{8}{13} = \frac{51}{2} \times \frac{13}{8} = \frac{663}{16} = 41\frac{7}{16} \checkmark$$

$$11. \quad \frac{28}{15} \div \frac{4}{35} = \frac{28}{15} \times \frac{35}{4} = \frac{7 \times 7}{3 \times 1} = \frac{49}{3} = 16\frac{1}{3} \checkmark$$

$$12. \quad \frac{343}{64} \div \frac{7}{8} = \frac{343}{64} \times \frac{8}{7} = \frac{49 \times 1}{8 \times 1} = \frac{49}{8} = 6\frac{1}{8}$$

$$13. \quad \frac{19}{3} \div \frac{8}{27} = \frac{19}{3} \times \frac{27}{8} = \frac{19 \times 9}{1 \times 8} = \frac{171}{8} = 21\frac{3}{8}$$

$$14. \quad \frac{21}{102} \div \frac{35}{18} = \frac{21}{102} \times \frac{18}{35} = \frac{3 \times 3}{17 \times 5} = \frac{9}{85} \checkmark$$

$$15. \quad 36\frac{1}{4} \div 8\frac{3}{4} = \frac{145}{4} \div \frac{35}{4} = \frac{145}{4} \times \frac{4}{35} = \frac{29}{7} = 4\frac{1}{7}$$

$$16. \quad \left(\frac{1}{5} \times \frac{16}{7}\right) \div \frac{2}{3} = \left(\frac{16}{35}\right) \times \frac{3}{2} = \frac{3 \times 4}{1 \times 1} \times \frac{3}{2} = \frac{6 \times 3}{2 \times 1} = 9$$

$$17. \quad \left(18\frac{2}{9} \div 9\frac{1}{9}\right) \div 1\frac{1}{3} = \left(\frac{164}{9} \div \frac{82}{9}\right) \div \frac{4}{3}$$

$$= \left(\frac{164}{9} \times \frac{9}{82}\right) \div \frac{4}{3}$$

$$= \left(\frac{2 \times 1}{1 \times 1}\right) \times \frac{3}{4}$$

$$= \frac{3}{4} = 0.75 \checkmark$$

vii) $\frac{20}{7} \times \text{Reciprocal of } \frac{20}{7} = 1$
 $\therefore \text{Reciprocal of } \frac{20}{7} = 1 \div \frac{20}{7} = 1 \times \frac{7}{20}$
 $= \frac{7}{20} \checkmark$

viii) $\frac{18}{23} \times \text{Reciprocal of } \frac{18}{23} = 1$
 $\therefore \text{Reciprocal of } \frac{18}{23} = 1 \div \frac{18}{23} = 1 \times \frac{23}{18} \checkmark$

ix) $5\frac{4}{7} \times \text{Reciprocal of } 5\frac{4}{7} = 1$
 $\therefore \text{Reciprocal of } 5\frac{4}{7} = 1 \div 5\frac{4}{7} = 1 \div \frac{39}{7}$
 $= 1 \times \frac{7}{39} = \frac{7}{39} \checkmark$

x) $3\frac{9}{11} \times \text{Reciprocal of } 3\frac{9}{11} = 1$
 $\text{Reciprocal of } 3\frac{9}{11} = 1 \div 3\frac{9}{11} = 1 \div \frac{42}{11}$
 $= 1 \times \frac{11}{42} = \frac{11}{42} \checkmark$

EXERCISE 2.5

~~#~~ Simplify:

1. $5 \div \frac{2}{11} = 5 \times \frac{11}{2} = \frac{5 \times 11}{2} = \frac{55}{2} = 27\frac{1}{2}$

2. $6 \div \frac{9}{5} = 6 \times \frac{5}{9} = \frac{2 \times 6 \times 5}{9 \times 3} = \frac{2 \times 5}{3} = \frac{10}{3} = 3\frac{1}{3}$

3. $\frac{5}{8} \div 3 = \frac{5}{8} \times \frac{1}{3} = \frac{5 \times 1}{8 \times 3} = \frac{5}{24} \checkmark$

4. $\frac{6}{11} \div 15 = \frac{6}{11} \times \frac{1}{15} = \frac{2 \times 6 \times 1}{11 \times 15 \times 5} = \frac{2}{55} \checkmark$

2. Find the reciprocal of each of the following:

i) $5 \times \text{Reciprocal of } 5 = 1$

$\therefore \text{Reciprocal of } 5 = \frac{1}{5}$ ✓

ii) $11 \times \text{Reciprocal of } 11 = 1$

$\therefore \text{Reciprocal of } 11 = \frac{1}{11}$ ✓

iii) $24 \times \text{Reciprocal of } 24 = 1$

$\therefore \text{Reciprocal of } 24 = \frac{1}{24}$ ✓

iv) $\frac{5}{12} \times \text{Reciprocal of } \frac{5}{12} = 1$

$\therefore \text{Reciprocal of } \frac{5}{12} = 1 \div \frac{5}{12}$
 $=$ 1 ×

$= \frac{12}{5}$ ✓

v) $\frac{1}{14} \times \text{Reciprocal of } \frac{1}{14} = 1$

$\therefore \text{Reciprocal of } \frac{1}{14} = 1 \div \frac{1}{14}$

$= 1 \times \frac{14}{1} = 14$ ✓

vi) $\frac{3}{7} \times \text{Reciprocal of } \frac{3}{7} = 1$

$\therefore \text{Reciprocal of } \frac{3}{7} = 1 \div \frac{3}{7} = 1 \times$

$= \frac{7}{3}$ ✓

$$\text{ii), } \sqrt{2} \times \text{---} = 1$$
$$\therefore \text{---} = \frac{1}{\sqrt{2}} \checkmark$$

$$\text{iii), } \frac{2}{13} \times \text{---} = 1$$
$$\therefore \text{---} = 1 \div \frac{2}{13}$$
$$= 1 \times \frac{13}{2}$$
$$= \frac{13}{2} \checkmark$$

$$\text{iv), } \sqrt{2} \frac{2}{3} \times \text{---} = 1$$
$$\therefore \text{---} = 1 \div \sqrt{2} \frac{2}{3}$$
$$= 1 \div \frac{17}{3}$$
$$= 1 \times \frac{3}{17}$$
$$= \frac{3}{17} \checkmark$$

$$\text{v), } \frac{9}{25} \times 2 \frac{7}{9} = \text{---}$$
$$\therefore \text{---} = \frac{9^1}{25^1} \times \frac{25^1}{9^1} = 1 \checkmark$$

$$\text{vi), } \sqrt{2} \frac{1}{3} \times \text{---} = 1$$
$$\therefore \text{---} = 1 \div \sqrt{2} \frac{1}{3}$$
$$= 1 \div \frac{16}{3}$$
$$= 1 \times \frac{3}{16}$$

$$= \cancel{2} \times \frac{117}{\cancel{4} 2} \text{ m}$$

$$= \frac{117}{2} \text{ m}$$

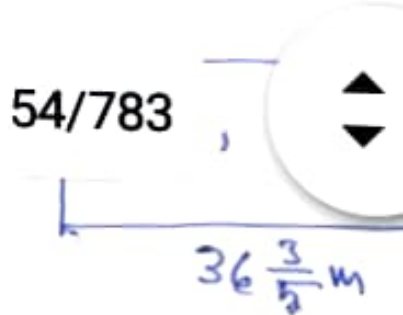
$$= 58 \frac{1}{2} \text{ m. } \checkmark$$

12.

$$\text{Length} = 36 \frac{3}{5} \text{ m}$$

$$\text{Breadth} = 16 \frac{2}{3} \text{ m}$$

54/783


$$36 \frac{3}{5} \text{ m}$$

\therefore Area of Rectangular park = length \times Breadth

$$= 36 \frac{3}{5} \text{ m} \times 16 \frac{2}{3} \text{ m}$$

$$= \frac{183 \cancel{6}}{5} \times \frac{50 \cancel{10}}{3} \text{ m}^2$$

$$= 610 \text{ m}^2 \checkmark$$

EXERCISE-2.4

1. Fill in the blanks.

$$\text{---} \times \frac{3}{22} = 1$$

$$\text{---} = 1 \div \frac{3}{22}$$

$$= 1 \times \frac{22}{3}$$

$$= \frac{22}{3}$$

$$\therefore \text{---} = \frac{22}{3} \checkmark$$

$$\begin{aligned} \text{Number of Girls} &= \frac{3}{5} \text{ of } 50 \\ &= \frac{3}{5} \times 50 \\ &= 30. \end{aligned}$$

$$\begin{aligned} \therefore \text{Number of Boys} &= \text{Total number of} \\ &\text{Students} - \text{Number of Girls.} \\ &= 50 - 30 \\ &= 20. \checkmark \end{aligned}$$

10. Length of each piece of iron rod = $6\frac{3}{4}$ m

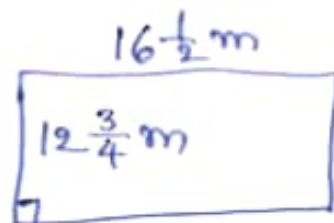
$$\begin{aligned} \therefore \text{Length of 8 pieces of iron rod} &= 8 \times 6\frac{3}{4} \text{ m} \\ &= 8 \times \frac{27}{4} \text{ m} \\ &= 2 \times 27 \text{ m} \\ &= 54 \text{ m}. \end{aligned}$$

\therefore Original length of Iron rod = 54 m \checkmark

11.

Length = $16\frac{1}{2}$ m

Breadth = $12\frac{3}{4}$ m



$$\begin{aligned} \text{Perimeter of Rectangular field} &= 2(\text{length} + \text{breadth}) \\ &= 2\left(16\frac{1}{2} + 12\frac{3}{4}\right) \text{ m} \\ &= 2 \times \left(\frac{33}{2} + \frac{51}{4}\right) \text{ m} \\ &= 2 \times \left(\frac{(33 \times 2) + 51}{4}\right) \text{ m} \end{aligned}$$

$$= \frac{158}{7} \times \frac{47}{3} \text{ kg.}$$

$$= \frac{7426}{21} \text{ kg.}$$

$$= 353 \frac{13}{21} \text{ kg.} \checkmark$$

6. Time required for stitching. 52/783 \therefore

$$= \frac{3}{4} \text{ hours.}$$

\therefore Time required for stitching 24 frocks.

$$= \frac{6}{24} \times \frac{3}{4} \text{ hours.}$$

$$= 6 \times 3 \text{ hours.}$$

$$= 18 \text{ hours.} \checkmark$$

7. Duration of one period in a school = $\frac{2}{3}$ hour

\therefore Duration of 9 periods = $9 \times \frac{2}{3}$ hour

$$= 6 \text{ hours.} \checkmark$$

8. Cost of 1 m cloth = ₹ $44 \frac{4}{5}$

\therefore Cost of $3 \frac{3}{4}$ m cloth = $3 \frac{3}{4} \times 44 \frac{4}{5}$ ₹

$$= \frac{3}{4} \times \frac{15}{5} \times \frac{224}{5} \text{ ₹}$$

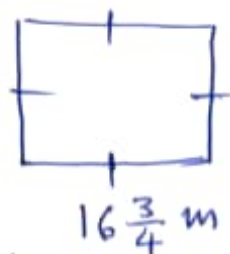
$$= 3 \times \frac{224}{5}$$

$$= ₹ 168 \checkmark$$

9. Number of students in the class = 50

3.

side of the square = $16\frac{3}{4}$ m



\therefore Area of the square = side \times side

$$= 16\frac{3}{4} \times 16\frac{3}{4} \text{ m}^2$$

$$= \frac{67}{4} \times \frac{67}{4} \text{ m}^2$$

$$= \frac{4489}{16} \text{ m}^2$$

$$= 280\frac{9}{16} \text{ m}^2 \quad \checkmark$$

\therefore perimeter of the square = $4 \times$ side

$$= 4 \times 16\frac{3}{4} \text{ m}$$

$$= 4 \times \frac{67}{4} \text{ m}$$

$$= 67 \text{ m} \quad \checkmark$$

4.

Distance Amar can walk in 1 hour

$$= 5\frac{1}{3} \text{ km}$$

\therefore Distance covered by him in $2\frac{1}{4}$ hours

$$= 2\frac{1}{4} \times 5\frac{1}{3} \text{ km}$$

$$= \frac{3\cancel{9}}{4} \times \frac{16\cancel{4}}{3} \text{ km}$$

$$= 3 \times 4 \text{ km}.$$

$$= 12 \text{ km} \quad \checkmark$$

5.

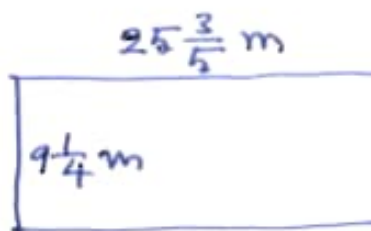
Weight of one cement Bag = $15\frac{2}{3}$ kg

\therefore Weight of $22\frac{4}{7}$ bags = $22\frac{4}{7} \times 15\frac{2}{3}$ kg

EXERCISE 2.3

1. Area of Rectangular

playground = Length \times breadth



$$\begin{aligned} &= 25\frac{3}{5} \times 9\frac{1}{4} \text{ m}^2 \\ &= \frac{128^{\cancel{32}}}{5} \times \frac{37}{4} \text{ m}^2 \\ &= \frac{32 \times 37}{5} \text{ m}^2 \\ &= \frac{1184}{5} \text{ m}^2 \\ &= 236\frac{4}{5} \text{ m}^2 \checkmark \end{aligned}$$

2. capacity of Bucket = $25\frac{3}{4} \text{ l}$

Bucket is $2\frac{2}{3}$ full.

$$\begin{aligned} \therefore \text{Amount of water in the Bucket} &= 2\frac{2}{3} \text{ of } 25\frac{3}{4} \text{ l} \\ &= \frac{8^2}{3} \times \frac{103}{4} \text{ l} \\ &= \frac{2 \times 103}{3} \text{ l} \\ &= \frac{206}{3} \text{ l} \\ &= 68\frac{2}{3} \text{ l} \checkmark \end{aligned}$$