

Day - Friday....

Lesson no.. 2.. Fractions....



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Exercise - 2C....

1 Write Down the Reciprocal of::

[i] $\frac{5}{8} = \frac{8}{5}$

[ii] $7 = \frac{1}{7}$

[iii] $\frac{1}{12} = 12$

[iv] $12\frac{3}{5} = \text{Reciprocal of } \frac{63}{5} = \frac{5}{63}$

2 Simplify::

[i] $\frac{4}{7} \div \frac{9}{14} = \frac{4}{7} \times \frac{14}{9}$
 $= \frac{8}{9}$

[ii] $\frac{7}{10} \div \frac{3}{5} = \frac{7}{10} \times \frac{5}{3}$
 $= \frac{7}{10} = 1\frac{1}{6}$

[iii] $\frac{8}{9} \div 16 = \frac{8}{9} \times \frac{1}{16}$
 $= \frac{1}{8}$

[iv] $9\frac{1}{3} = 9 \times 3$
 $= 27$

[v] $24 \div \frac{6}{7} = 24 \times \frac{7}{6}$
 $= 4 \times 7 = 28$

[vi] $3\frac{3}{5} \div \frac{4}{5} = \frac{18}{5} \div \frac{4}{5}$
 $= \frac{18}{5} \times \frac{5}{4}$
 $= \frac{18}{4} = \frac{9}{2} = 4\frac{1}{2}$

[vii] $3\frac{3}{7} \div \frac{8}{21} = \frac{24}{7} \div \frac{8}{21}$
 $= \frac{24}{7} \times \frac{21}{8}$
 $= 33 = 9$

[viii] $5\frac{4}{7} \div 1\frac{3}{10} = \frac{39}{7} \div \frac{13}{10}$
 $= \frac{39}{7} \times \frac{10}{13}$
 $= \frac{30}{7} = 4\frac{2}{7}$

[ix] $15\frac{3}{7} \div 1\frac{23}{49}$
 $= \frac{108}{7} \div \frac{72}{49}$
 $= \frac{108 \times 49}{7 \times 72}$
 $= \frac{9 \times 7}{1 \times 6} = \frac{3 \times 7}{1 \times 2} = \frac{21}{2} = 10\frac{1}{2}$

3. Divide::

[i] $\frac{11}{24} \text{ By } \frac{7}{8}$
 $= \frac{11}{24} \times \frac{8}{7}$
 $= \frac{11}{21}$

[ii] $6\frac{7}{8} \text{ By } 1\frac{11}{16}$
 $= \frac{55}{8} \times \frac{16}{11}$
 $= 5 \times 2$

[iii] $5\frac{5}{9} \text{ By } 3\frac{1}{3}$
 $= \frac{50}{9} \times \frac{3}{10}$
 $= \frac{5}{3} = 1\frac{2}{3}$

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[iv] $32 \text{ By } 1\frac{3}{5}$

$$= 32 \times \frac{5}{8}$$

$$= 4 \times 5 = 20$$

[v] $45 \text{ By } 1\frac{4}{5}$

$$= 45 \times \frac{5}{9}$$

$$= 5 \times 5 = 25$$

[vi] $63 \text{ By } 2\frac{1}{4}$

$$= 63 \times \frac{4}{3}$$

$$= 7 \times 4 = 28$$

[4....] A Rope of length $13\frac{1}{2}$ Meters Has Been Divided Into 9 Pieces of the Same Length what is the Length of Each Piece??
 $\Rightarrow$ The Length of Each Pieces of Rope is $1\frac{1}{2}$ Meters....

[5....] 18 Boxes of Nails weights Equally And Their Total weight is $49\frac{1}{2}$ kg.... How Much Does Each Box weight??
 $\Rightarrow$ The weight of Each Box is $2\frac{3}{4}$ kg....

[6....] By selling Oranges at the Rate of $\text{₹}6\frac{3}{4}$ per Oranges,, A Man Gets $\text{₹}378$ How Many Oranges Does He sell?

$$\begin{aligned} \Rightarrow \text{cost of 1 Oranges} &= \text{₹}6\frac{3}{4} \\ &= \frac{6 \times 4 + 3}{4} = \frac{24 + 3}{4} = \frac{27}{4} \end{aligned}$$

Total Cost of the Oranges Sold By the Man = $\text{₹}378$

$$\begin{aligned} \text{Required NO.. of Oranges} &= 378 \div \frac{27}{4} \\ &= \frac{14}{378} \times 4 \quad \left[\text{Reciprocal... of } \frac{27}{4} = \frac{4}{27} \right] \\ &= 14 \times 4 \\ &= 56 \end{aligned}$$

[7....] Mangoes are sold at $\text{₹}43\frac{1}{2}$ per kg.... what is the weight of Mangoes Available for $\text{₹}326\frac{1}{4}$?

$$\begin{aligned} \Rightarrow \text{cost of 1 kg Mangoes} &= \text{₹}43\frac{1}{2} \\ &= \frac{43 \times 2 + 1}{2} = \frac{86 + 1}{2} = \frac{87}{2} \end{aligned}$$

$$\begin{aligned} \text{Total cost of the } \text{Required Mangoes} &= \text{₹}326\frac{1}{4} \\ &= \frac{326 \times 4 + 1}{4} = \frac{1304 + 1}{4} = \frac{1305}{4} \end{aligned}$$

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$$\begin{aligned}\text{Weight of Required Mangoes} &= (1305 \div \frac{87}{2}) \text{ kg} \\ &= \left(\frac{15}{42} \times \frac{21}{87} \right) \left[\text{Reciprocal of } \frac{87}{2} = \frac{2}{87} \right] \\ &= \frac{15 \times 1}{2 \times 1} = \frac{15}{2} \\ &= 7 \frac{1}{2} \text{ kg}\end{aligned}$$

8. Vikas Can cover a Distance of $20 \frac{2}{3}$ km in $7 \frac{3}{4}$ HOURS ON FOOT.

... How Many KM per HOURS Does HE walk ?

⇒ Distance covered By Vikas in $7 \frac{3}{4}$ HOURS = $20 \frac{2}{3}$ km

Distance Covered By Him in 1H = $(20 \frac{2}{3} \div 7 \frac{3}{4})$ km

$$= \left(\frac{62}{3} \div \frac{31}{4} \right) \text{ km}$$

$$= \left(\frac{62}{3} \times \frac{4}{31} \right) \text{ km}$$

$$= \left(\frac{2 \times 4}{3 \times 1} \right) \text{ km} = \left(\frac{8}{3} \right) \text{ km}$$

$$= 2 \frac{2}{3} \text{ km}$$

9. PREETI Bought $8 \frac{1}{2}$ kg of sugar for ₹ $242 \frac{1}{2}$... find the Price of sugar Per kg...

$$\begin{aligned}\Rightarrow \text{Cost of } 8 \frac{1}{2} \text{ kg of Sugar} &= ₹ 242 \frac{1}{2} \\ &= \frac{242 \times 4 + 1}{4} = \frac{969}{4}\end{aligned}$$

$$\text{Cost of 1 kg of Sugar} = \left(\frac{969}{4} \div 8 \frac{1}{2} \right)$$

$$= \left(\frac{969}{4} \div \frac{17}{2} \right)$$

$$= \left(\frac{969}{4} \times \frac{2}{17} \right)$$

$$= \left(\frac{57 \times 1}{2 \times 1} \right) = \frac{57}{2}$$

$$= ₹ 28 \frac{1}{2}$$

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10... If the cost of a Notebook is ₹ $27\frac{3}{4}$, How Many NoteBooks Can Be Purchased for ₹ $249\frac{3}{4}$?

⇒ Cost of 1 Notebook = ₹ $27\frac{3}{4}$

$$= \frac{27 \times 4 + 3}{4}$$

$$= \frac{108 + 3}{4} = \frac{111}{4}$$

∴ Number of NoteBooks Purchased for ₹ $249\frac{3}{4}$

$$= \left(\frac{249\frac{3}{4}}{\frac{111}{4}} \right)$$

$$= \left(\frac{249 \times 4 + 3}{4} \div \frac{111}{4} \right)$$

$$= \left(\frac{999}{4} \div \frac{111}{4} \right)$$

$$= \left(\frac{9}{1} \times \frac{4}{111} \right)$$

$$= \frac{9 \times 1}{1 \times 1} = 9 \text{ NoteBooks}$$

11... At a charity show the price of Each Ticket was ₹ $32\frac{1}{2}$... The Total Amount collected By a Boy was ₹ $877\frac{1}{2}$... How Many Tickets were SOLD By Him?

⇒ Cost of 1 Ticket = ₹ $32\frac{1}{2} = \frac{32 \times 2 + 1}{2}$

$$= \frac{64 + 1}{2} = \frac{65}{2}$$

Total Amount Collected By a Boy = ₹ $877\frac{1}{2}$

$$= \frac{877 \times 2 + 1}{2} = \frac{1754 + 1}{2}$$

$$= \frac{1755}{2}$$

NUMBERS of Tickets SOLD = $\left(\frac{1755}{2} \div \frac{65}{2} \right)$

$$= \left(\frac{1755}{65} \times \frac{2}{2} \right)$$

$$= \frac{27 \times 1}{1 \times 1} = 27 \text{ Tickets}$$

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...12... A GROUP of students Arranged A Picnic... Each student Contributed ₹ $261\frac{1}{2}$... The total contribution was ₹ 28761

How Many students Are there in the Group?

$$\Rightarrow \text{AMOUNT CONTRIBUTED BY 1 STUDENT} = ₹ 261\frac{1}{2} \\ = \frac{261 \times 2 + 1}{2} = \frac{523}{2}$$

$$\text{TOTAL AMOUNT COLLECTED} = ₹ \frac{2876 \times 2 + 1}{2} = \frac{5753}{2}$$

$$\begin{aligned} \text{NO. OF STUDENTS IN THE GROUP} &= \left(\frac{5753}{2} \div \frac{523}{2} \right) \\ &= \left(\frac{5753}{2} \times \frac{2}{523} \right) \\ &= \frac{11 \times 1}{1 \times 1} = \underline{\underline{11 \text{ Students}}} \end{aligned}$$

...13... 24 Litres of Milk was Distributed Equally Among ALL the Students of A Hostel... If Each student Got $\frac{2}{3}$ Litres of Milk,, How Many students are there in the Hostel?

$$\Rightarrow \begin{aligned} \text{Quantity OF Milk Given to Each student} &= \frac{2}{3} \text{ L} \\ \text{Total Quantity of Milk Distributed Among ALL the students} &= 24 \text{ L} \end{aligned}$$

$$\begin{aligned} \therefore \text{NO. of students} &= 24 \div \frac{2}{3} \\ &= \frac{12}{1} \times \frac{3}{2} \\ &= 12 \times 3 \\ &= 60 \text{ students} \end{aligned}$$

...14... A Bucket Contains $20\frac{1}{4}$ Litres of water.... A small Jug Has A Capacity of $\frac{3}{4}$ Litres... How Many times the Jug Has to Be Filled With water from the Bucket to Get it Emptied?

$$\Rightarrow \begin{aligned} \text{Capacity of the small jug} &= \frac{3}{4} \text{ Litres} \\ \text{Capacity of the Bucket} &= 20\frac{1}{4} = \frac{81}{4} \text{ Litres} \end{aligned}$$

$$\begin{aligned} \therefore \text{REQUIRED NO. of small jugs} &= \left(\frac{81}{4} \div \frac{3}{4} \right) \\ &= \left(\frac{81}{4} \times \frac{4}{3} \right) = \frac{81}{3} = \underline{\underline{27 \text{ Times}}} \end{aligned}$$

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15....

The Product of Two NUMBERS is $15\frac{5}{6}$ If one of the NUMBERS is $6\frac{1}{3}$..., find the other....

$$\Rightarrow \text{Product of the two NO....} = 15\frac{5}{6} = \frac{95}{6}$$

$$\text{ONE of the NO....} = 6\frac{1}{3} = \frac{19}{3}$$

$$\begin{aligned} \therefore \text{The other NO....} &= \left(\frac{95}{6} \div \frac{19}{3} \right) \\ &= \left(\frac{95}{6} \times \frac{3}{19} \right) \\ &= \frac{5}{2} = 2\frac{1}{2} \end{aligned}$$

16....

By what NUMBERS should $9\frac{4}{5}$ Be Multiplied to Get 42?

$$\Rightarrow \text{Product of Two NO....} = 42$$

$$\text{ONE of the NO....} = 9\frac{4}{5} = \frac{49}{5}$$

$$\therefore \text{other NO....} = \left(42 \div \frac{49}{5} \right)$$

$$= \left(42 \times \frac{5}{49} \right) \quad [42 \text{ AND } 49 \text{ Are Divisible with 7}]$$

$$= \left(\frac{6 \times 5}{7} \right) = \frac{30}{7} = 4\frac{2}{7}$$

17....

By WHAT NO.... SHOULD $6\frac{2}{9}$ BE Divided to Obtain $4\frac{2}{3}$?

$$\Rightarrow \text{Required NO....} = \left(6\frac{2}{9} \div 4\frac{2}{3} \right)$$

$$= \left(\frac{56}{9} \div \frac{14}{3} \right)$$

$$= \left(\frac{56}{9} \times \frac{3}{14} \right)$$

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

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