

Sanjeerani Public School :

Assignment No- 2

Class- VII

Subject - Maths

Ch- 2 Fractions.

Let us do 2.1

B-1 Simplify

(i)  $\frac{3}{5} + 1\frac{1}{4}$

Sol

$$\frac{3}{5} + \frac{5}{4}$$

L.C.M of 5 & 4 = 20

$$= \frac{3 \times 4}{5 \times 4} = \frac{12}{20}$$

$$= \frac{5 \times 5}{4 \times 5} = \frac{25}{20}$$

$$= \frac{12 + 25}{20} = \frac{37}{20}$$

$$\frac{37}{20} = 1\frac{17}{20}$$

(ii)  $3 + \frac{1}{3} + 1\frac{1}{4}$

Sol

$$\frac{3}{1} + \frac{1}{3} + \frac{5}{4}$$

L.C.M of 3 & 4 = 12

$$= \frac{3 \times 12}{1 \times 12} = \frac{36}{12}$$

$$= \frac{1 \times 4}{3 \times 4} = \frac{4}{12}$$

$$= \frac{5 \times 3}{4 \times 3} = \frac{15}{12}$$

$$= \frac{36 + 4 + 15}{12} = \frac{55}{12}$$

$$\frac{55}{12} = 4\frac{7}{12}$$

III

$$\frac{8}{1} - \frac{5}{4}$$

Sol

L.C.M of 1 & 4 = 4

$$\frac{8 \times 4}{1 \times 4} = \frac{32}{4}$$

$$\frac{5 \times 1}{4 \times 1} = \frac{5}{4}$$

IV

$$\frac{32}{3} - 1\frac{5}{6}$$

Sol

$$\frac{11}{3} - \frac{11}{6}$$

L.C.M of 3 & 6 = 6

$$\frac{11 \times 2}{3 \times 2} = \frac{22}{6}$$

$$= \frac{32 \cdot 5}{4} = \frac{27}{4}$$

$$= \frac{11}{6} \times \frac{1}{1} = \frac{11}{6}$$

$$\frac{27}{4} = \frac{63}{4}$$

$$= \frac{22-11}{6} = \frac{11}{6} = 1\frac{5}{6}$$

2 Arrange the following into ascending order

(1)  $\frac{3}{4}, \frac{5}{12}, \frac{1}{6}, \frac{12}{3}$

sol  $\frac{3}{4}, \frac{5}{12}, \frac{1}{6}, \frac{5}{3}$

L.C.M of 4, 12, 6 & 3 = 12

$$\frac{3}{4} \times \frac{3}{3} = \frac{9}{12}$$

$$\frac{5}{12} \times \frac{1}{1} = \frac{5}{12}$$

$$\frac{1}{6} \times \frac{2}{2} = \frac{2}{12}$$

$$\frac{5}{3} \times \frac{4}{4} = \frac{20}{12}$$

A.O  $\rightarrow \frac{1}{6}, \frac{5}{12}, \frac{3}{4}, \frac{12}{3}$

3 Arrange the following in descending order.

(ii)  $\frac{5}{6}, \frac{1}{3}, 1\frac{1}{2}, \frac{3}{4}$

sol  $\frac{5}{6}, \frac{1}{3}, \frac{3}{2}, \frac{3}{4}$

L.C.M of 6, 3, 2, & 4 = 12

$$\frac{5}{6} \times \frac{2}{2} = \frac{10}{12}$$

$$\frac{1}{3} \times \frac{4}{4} = \frac{4}{12}$$

$$\frac{3}{2} \times \frac{6}{6} = \frac{18}{12}$$

$$\frac{3}{4} \times \frac{3}{3} = \frac{9}{12}$$

$$D.O \rightarrow \frac{3}{2}, \frac{5}{6}, \frac{3}{4}, \frac{1}{3}$$

$$= \frac{11}{2}, \frac{5}{6}, \frac{3}{4}, \frac{1}{3}$$

5 A rectangular garden is  $10\frac{1}{5}$  m long and  $8\frac{1}{2}$  m broad. Find the perimeter of the garden.

Sol  $L = 10\frac{1}{5} \text{ m} = \frac{51}{5} \text{ m}$

$$B = 8\frac{1}{2} \text{ m} = \frac{17}{2} \text{ m}$$

$$\begin{aligned} \text{Perimeter} &= 2(L+B) \\ &= 2\left(\frac{51}{5} + \frac{17}{2}\right) \end{aligned}$$

$$L.C.M \text{ of } (5, 2) = 10$$

$$= 2 \left( \frac{102 + 85}{10} \right) = 2 \times \frac{187}{10}$$

$$= \frac{187}{5} = 37\frac{2}{5} \text{ m}$$

6

Suman studies  $5\frac{2}{3}$  hours daily. She devotes  $2\frac{4}{5}$  hours of her time for Science and Mathematics. How much time does she devote for other subjects

Sol

$$\text{Total time for studies} = 5\frac{2}{3} \text{ h} = \frac{17}{3} \text{ h}$$

$$\text{Time given for Science and Maths} = 2\frac{4}{5} \text{ h} = \frac{14}{5} \text{ h}$$

$$\text{Time devote for other subjects} = \frac{17}{3} - \frac{14}{5}$$

$$\text{LCM of } 3 \text{ \& } 5 = 15$$

$$= \frac{85}{15} - \frac{42}{15} = \frac{43}{15} = 2\frac{13}{15} \text{ h}$$

8/

Rakhi covered a distance of  $15\frac{1}{10}$  km. Out of this she covered  $5\frac{1}{4}$  km by train,  $6\frac{1}{2}$  km by bus and rest by taxi. How many kilometers did she cover by taxi?

Sol

$$\text{Total distance covered} = 15\frac{1}{10} = \frac{151}{10} \text{ km}$$

$$\text{Distance covered by train and bus} = 5\frac{1}{4} \text{ km} \text{ and } 6\frac{1}{2} \text{ km}$$

$$\text{Distance covered by taxi} = \frac{151}{10} - \left(5\frac{1}{4} + 6\frac{1}{2}\right)$$

$$= \frac{151}{10} - \left(\frac{21}{4} + \frac{13}{2}\right)$$

$$= \frac{302 - (105 + 130)}{20}$$

$$= \frac{302 - 235}{20} = \frac{67}{20} = \frac{3 \frac{7}{20}}{20} = \frac{87}{20}$$

B.

9 Find two fractions  $F_1$  and  $F_2$  with the same denominator equal to 6 such that  $F_1 + F_2 = 1$  and  $F_1 - F_2 = \frac{2}{3}$

sol  $F_1 = \frac{5}{6}$   $F_2 = \frac{1}{6}$

$$\frac{5}{6} + \frac{1}{6} = \frac{6}{6} = 1$$

$$\frac{5}{6} - \frac{1}{6} = \frac{4}{6} = \frac{2}{3}$$

2

so

H.W parts of QNO 1, 2, & 3  
QNO - 4 & 7

let us do 2.2

B-1 Find the product :-

(i)  $\frac{3}{5} \times 6$

sol  $\frac{3}{5} \times \frac{6}{1} = \frac{18}{5} = 3 \frac{3}{5}$

(ii)  $\frac{11}{12} \times 6$

sol  $\frac{11}{12} \times \frac{6}{1} = \frac{11 \times 5}{2} = \frac{11 \times 5}{2}$

4

8

iii  $\frac{15}{32} \times 18$

$$\frac{15}{32} \times \frac{18}{1} = \frac{135}{16} = 8 \frac{7}{16}$$

iv  $2 \frac{5}{8} \times 12$

$$\frac{21}{8} \times \frac{12}{1} = \frac{63}{2} = 31 \frac{1}{2}$$

$$\underline{\text{v}} \quad 5 \frac{4}{15} \times 21$$

$$\underline{\text{sol}} \quad \frac{79}{15} \times \frac{21}{1} = \frac{553}{5}$$

$$= \frac{553}{5} = 110 \frac{3}{5}$$

$$\underline{\text{vi}} \quad 4 \frac{3}{16} \times 36$$

$$\underline{\text{sol}} \quad \frac{67}{16} \times \frac{36}{1} = \frac{603}{4}$$

$$\frac{603}{4} = 150 \frac{3}{4}$$

$$\underline{\text{vii}} \quad \frac{25}{12} \times 0$$

$$\underline{\text{sol}} \quad \frac{25}{12} \times 0 = 0$$

$$\underline{\text{viii}} \quad 3 \frac{1}{9} \times 21$$

$$\underline{\text{sol}} \quad \frac{28}{9} \times \frac{21}{1} = \frac{196}{3}$$

$$\frac{196}{3} = 65 \frac{1}{3}$$

$$\underline{\text{ix}} \quad \frac{1}{5} \times \frac{1}{4}$$

$$\underline{\text{sol}} \quad \frac{1}{5} \times \frac{1}{4} = \frac{1}{20}$$

$$\underline{\text{x}} \quad \frac{1}{10} \times \frac{1}{15}$$

$$\underline{\text{sol}} \quad \frac{1}{10} \times \frac{1}{15} = \frac{1}{150}$$

2) Find

(i)  $\frac{3}{7}$  of 14

$$\underline{\text{sol}} \quad \frac{3}{7} \times \frac{14}{1} = \frac{6}{1} = 6$$

ii  $\frac{5}{8}$  of 16

$$\underline{\text{sol}} \quad \frac{5}{8} \times \frac{16}{1} = \frac{10}{1} = 10$$

iii  $\frac{2}{5}$  of  $\frac{10}{11}$

$$\underline{\text{sol}} \quad \frac{2}{5} \times \frac{10}{11} = \frac{4}{11}$$

iv  $\frac{3}{8}$  of  $2 \frac{2}{3}$

$$\underline{\text{sol}} \quad \frac{3}{8} \times \frac{8}{3} = 1$$

3) Which is greater?

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

Sol  $\frac{1}{2}$  of  $\frac{6}{7} = \frac{1}{2} \times \frac{6}{7} = \frac{3}{7}$

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

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

4. Simplify

(i)  $\frac{5}{7} \times 1\frac{2}{3} + 1\frac{5}{7} \times \frac{1}{3}$

Sol  $\frac{5}{7} \times \frac{5}{3} + \frac{12}{7} \times \frac{1}{3}$

$= \frac{25}{21} + \frac{4}{7}$

L.C.M of 21 & 7 = 21

$= \frac{25 + 12}{21} = \frac{37}{21} = 3\frac{1}{21}$

III  $1\frac{2}{3} \times 2\frac{3}{5} - 1\frac{2}{3} \times \frac{1}{5}$

Sol  $\frac{5}{3} \times \frac{13}{5} - \frac{5}{3} \times \frac{1}{5}$

$\frac{13}{3} - \frac{1}{3} = \frac{12}{3} = 4$

5 Simplify

(i)  $\frac{2}{3} \times \frac{9}{16} \times \frac{4}{27}$

sol  $\frac{2^1}{3^1} \times \frac{9^1}{16^1} \times \frac{4^1}{27^1} = \frac{1}{18}$

ii  $\frac{14}{25} \times \frac{35}{51} \times \frac{17}{49}$

sol  $\frac{2^1}{5^2} \times \frac{5^1}{3 \cdot 17} \times \frac{7^1}{7 \cdot 7} = \frac{2}{15}$

iii  $\frac{42}{65} \times \frac{39}{56} \times \frac{24}{27}$

sol  $\frac{6 \cdot 7}{5 \cdot 13} \times \frac{3 \cdot 13}{8 \cdot 7} \times \frac{2 \cdot 2 \cdot 2 \cdot 3}{3 \cdot 3 \cdot 3} = \frac{2}{5}$

iv  $6\frac{7}{8} \times 6\frac{2}{11} \times \frac{3}{10}$

$\frac{55^1}{8^1} \times \frac{34^1}{11^1} \times \frac{3^1}{10^1} = \frac{51}{4} = 12\frac{3}{4}$

H.W Parts of QNO 1, 2, 3, 4, 5 and QNO-6



Let us do 2=3

B-1 A teacher takes 4 periods in a day.  
 The duration of each period is  $5\frac{1}{2}$  hours.  
 what is the duration of 4 periods?

sol duration of 1 period = 5 hours  
 duration of 4 periods =  $\frac{5 \times 4}{2}$   
 $= \frac{5}{3} = 1\frac{2}{3}$  hours

2 The cost of 1 litre of milk is ₹  $6\frac{2}{5}$   
 Find the cost of 5 litres of milk.

sol Cost of 1 L of milk = ₹  $6\frac{2}{5}$   
 $4 \quad 4 \quad 5 \quad 4 \quad 4 \quad 4 \quad 4 = ₹ 6\frac{2}{5} \times 5$   
 $= \frac{32}{5} \times 5 = ₹ 32$   
 B

4 A postman walks  $5\frac{3}{7}$  km in a day.  
 How much distance will he cover  
 in  $4\frac{1}{2}$  days

sol Distance covered in 1 day =  $5\frac{3}{7}$  km  
 " " " " "  $4\frac{1}{2}$  days =  $5\frac{3}{7} \times 4\frac{1}{2}$   
 $= \frac{38}{7} \times \frac{9}{2} = \frac{171}{7} = 24\frac{3}{7}$  km

7 one tin holds  $4\frac{1}{5}$  L of oil. How many litres of oil can 15 such tins hold?

Sol  
 1 tin can hold oil =  $4\frac{1}{5}$  L  
 15 tins can hold oil =  $4\frac{1}{5} \times 15$   
 $= \frac{21}{5} \times 15 = 63$  litres

(8) An Iron <sup>rod</sup> has been divided into 8 pieces of equal lengths. If the length of each piece is  $6\frac{3}{4}$  m, what was the length of the Iron rod?

Sol  
 Length of 1 piece =  $6\frac{3}{4}$  m  
 " " 8 pieces =  $6\frac{3}{4} \times 8$   
 $= \frac{27}{4} \times 8 = 54$  m

10 A water tank can hold  $56\frac{1}{4}$  Liter of water. How much water is contained in the tank when it is  $\frac{2}{5}$  full?

Sol  
 total capacity of tank  $56\frac{1}{4}$  L  
 $\frac{2}{5}$  part of container is  
 $= \frac{2}{5}$  of  $56\frac{1}{4}$   
 $=$

$$= \frac{2^1 \times 4^5}{5} = \frac{2 \times 225}{5} = \frac{450}{5} = 22 \frac{1}{2}$$

How ONO - 3, 5, 6, 9, 11

Let us do 2-4

B-1 Fillups [need not to do in copy]

2. Find the multiplicative inverse of each of following

(i) 5      Ans  $\rightarrow \frac{1}{5}$

ii 11      Ans  $\frac{1}{11}$

iii 24      Ans =  $\frac{1}{24}$

iv  $\frac{5}{12}$       Ans =  $\frac{12}{5}$

v  $\frac{1}{14}$       Ans =  $\frac{14}{1}$

vi  $\frac{3}{7}$       Ans  $\frac{7}{3}$

vii  $\frac{20}{7}$       Ans  $\frac{7}{20}$

viii  $\frac{18}{23}$       Ans  $\frac{23}{18}$

ix  $5\frac{4}{7} = \frac{39}{7} = \frac{7}{39}$  Ans

x  $3\frac{9}{11} = \frac{42}{11} = \frac{11}{42}$  Ans

let us do 2.5

B Divide

I  $\frac{4}{7} \div \frac{2}{1}$

sol  $= \frac{4^2}{7} \times \frac{1}{2} = \frac{2}{7}$

II  $\frac{5}{9} \div 8$

sol  $\frac{5}{9} \div \frac{8}{1}$   
 $= \frac{5}{9} \times \frac{1}{8} = \frac{5}{72}$

III  $\frac{6}{9} \div 4$

sol  $\frac{6}{9} \div \frac{4}{1} = \frac{6}{9} \times \frac{1}{4}$   
 $= \frac{1}{6}$

IV  $\frac{5}{7} \div 10$

sol  $\frac{5}{7} \div \frac{10}{1} = \frac{5}{7} \times \frac{1}{10}$   
 $= \frac{1}{14}$

V  $\frac{15}{17} \div 10$

sol  $= \frac{15}{17} \times \frac{1}{10} = \frac{3}{34}$

VI  $\frac{15}{16} \div 20$

sol  $\frac{15}{16} \div \frac{20}{1} = \frac{15}{16} \times \frac{1}{20}$   
 $= \frac{3}{64}$

VII  $\frac{1}{9} \div 7$

sol  $\frac{1}{9} \div \frac{7}{1} = \frac{1}{9} \times \frac{1}{7} = \frac{1}{63}$

VIII  $2\frac{4}{7} \div 8$

sol  $2\frac{4}{7} \div \frac{8}{1} = \frac{18}{7} \times \frac{1}{8}$   
 $= \frac{9}{28}$

IX  $5\frac{1}{3} \div 12$

$5\frac{1}{3} \div \frac{12}{1} = \frac{16}{3} \times \frac{1}{12}$   
 $= \frac{4}{9}$

X  $7\frac{2}{9} \div 26$

sol  $7\frac{2}{9} \div \frac{26}{1} = \frac{65}{9} \times \frac{1}{26}$   
 $= \frac{5}{18}$

$$\text{XI} \quad \frac{2}{5} \div \frac{7}{8}$$

$$\text{Sol} \quad \frac{2}{5} \times \frac{8}{7} = \frac{16}{35}$$

$$\text{XII} \quad \frac{12}{17} \div \frac{8}{15}$$

$$\begin{aligned} \text{Sol} \quad & \frac{12}{17} \times \frac{15}{8} = \frac{45}{34} \\ & = 1 \frac{11}{34} \end{aligned}$$

$$\text{XIII} \quad \frac{14}{27} \div \frac{7}{9}$$

$$\text{Sol} \quad \frac{14}{27} \times \frac{9}{7} = \frac{2}{3}$$

$$\text{XIV} \quad 2\frac{1}{5} \div \frac{11}{15}$$

$$= \frac{11}{5} \times \frac{15}{11} = 3$$

C

How many  $\frac{1}{3}$  minutes are there in 5 minutes.

Sol

$$5 \div \frac{1}{3} = 5 \times \frac{3}{1} = \underline{15}$$

Ex ON a B parts 15 to 28

Let us do 2.6

Q+

The cost of 10 kg of ~~sugar~~ sugar is ₹  $62\frac{1}{2}$ . what is cost of 1 kg of sugar.

Sol

Cost of 10 kg of sugar is = ₹  $62\frac{1}{2}$

$$" \quad " \quad 1 \quad = \quad = \quad = \frac{62\frac{1}{2}}{10}$$

$$= \frac{25}{2} \times \frac{1}{10} = \frac{25}{20}$$

$$= ₹ 6\frac{1}{4}$$

3 The weight of 18 boxes is  $12\frac{4}{5}$  kg.  
Find the weight of 1 box.

Sol

$$\begin{aligned} \text{weight of 18 boxes} &= 12\frac{4}{5} \text{ kg} \\ \text{" " 1 box} &= 12\frac{4}{5} \div 18 \\ &= \frac{64}{5} \times \frac{1}{18} = \frac{32}{45} \text{ kg} \end{aligned}$$

5 A cyclist  $14\frac{2}{5}$  km in  $2\frac{1}{4}$  hours. what is the distance ~~between~~ covered by the cyclist in an hour?

Sol

$$\begin{aligned} \text{Distance covered in } 2\frac{1}{4} \text{ hours} &= 14\frac{2}{5} \text{ km} \\ \text{" " " " in 1 hour} &= 14\frac{2}{5} \div 2\frac{1}{4} \\ &= \frac{72}{5} \times \frac{4}{9} = \frac{32}{5} \\ &= 6\frac{2}{5} \text{ km} \end{aligned}$$

6 Sushma had  $11\frac{1}{4}$  m long ribbon. She cut it into 9 equal pieces. Find the length of each piece of the ribbon.

Sol

$$\begin{aligned} \text{length of 9 pieces} &= 11\frac{1}{4} \text{ m} \\ \text{" " 1 " " " " } &= 11\frac{1}{4} \div 9 \\ &= \frac{45}{4} \times \frac{1}{9} = \frac{5}{4} = 1\frac{1}{4} \text{ m} \end{aligned}$$

9 The product of two fractions is 16  
If one of the fraction is  $3\frac{1}{7}$ , find  
other

sol Product of two fractions = 16

$$\text{first No} = 3\frac{1}{7}$$

$$\text{Second NO} = 16 \div 3\frac{1}{7}$$

$$= \frac{16}{1} \times \frac{7}{7} = \frac{56}{7} = 8$$

10 The area of a room is  $65\frac{1}{4}$  sq. metres  
If its breadth is  $5\frac{7}{16}$  metres. find  
the length

sol area =  $65\frac{1}{4}$  sq. m

$$\text{Breadth} = 5\frac{7}{16} \text{ m}$$

$$\text{Length} = \text{area} \div \text{breadth}$$

$$= 65\frac{1}{4} \div 5\frac{7}{16}$$

$$= \frac{261}{4} \times \frac{16}{87} = 12 \text{ m.}$$

H.W ONO 2, 4, 7, 8