Fractions {chapter ***– 6}*** ***Mathematics*** ***Class / VI***

Assignment iii

Instructions to students: The notes provided must be copied to the math's copy & then do the Homework in the same copy.

- ***Addition of fraction*** : like fraction

Rule : Sum of like fraction = $\frac{\text{Sum of their number}}{\text{Common denominator}}$

Eg .i) $\frac{5}{9} + \frac{2}{9} = \frac{5+2}{9} = \frac{7}{9}$

ii) $\frac{5}{16} + \frac{3}{16} + \frac{7}{16} = \frac{5+3+7}{16} = \frac{15}{16}$

ii) Unlike Fraction

reduce them to like fraction & add

Eg. I) find the sum ; $\frac{5}{9} + \frac{7}{12}$

L.C.M of 9 & 12 = 36

- $\frac{5}{9} + \frac{7}{12} = \frac{20+21}{36}$ { 36 ÷ 9 = 4 & 4×5 = 20 { 36 ÷ 12 = 3 & 3 × 7 = 21}

$= \frac{41}{36} = 1\frac{5}{36}$

Eg . 2) find the sum; $6\frac{4}{5} + 3\frac{9}{10} + 5\frac{7}{15}$

$= \frac{34}{5} + \frac{39}{10} + \frac{82}{15}$

LCM = 30

$= \frac{204+117+164}{30}$

$= \frac{485}{30} = \frac{97}{6} = 16\frac{1}{6}$

- **Subtraction Of Fraction**

Rule. 1) Difference of like fraction = $\frac{Difference\ of\ Numerator}{Common\ Denominator}$

Eg. $\frac{7}{9} - \frac{2}{9} = \frac{7-2}{9} = \frac{5}{9}$

Unlike fraction

Rule : Convert the given fraction into like fraction & then substract.

Eg. 1) Find the difference : $\frac{7}{8} - \frac{5}{12}$

LCM of 8 & 12 is 24

$\frac{7}{8} - \frac{5}{12} = \frac{21-10}{24} = \frac{11}{24}$

Eg. 2) Subtract $4\frac{5}{9}$ from $7\frac{1}{6}$

$7\frac{1}{6} - 4\frac{5}{9}$

$= \frac{43}{6} - \frac{41}{9}$ LCM = 18

$\frac{129-82}{18}$

$= \frac{47}{18} = 2\frac{11}{18}$

Eg .3) Simplify : $2 + 5\frac{2}{3} - 8\frac{3}{4} + 4\frac{5}{6}$

$= \frac{2}{1} + \frac{17}{3} - \frac{35}{4} + \frac{29}{6}$

$= \frac{24+68-105+58}{12}$

$= \frac{150-105}{12} = \frac{45}{12} = \frac{15}{4} = 3\frac{3}{4}$

Multiplication Of Fraction

Rule = Product of fractions = Product Of Their Numerator / *Product of their Denominator*

Then $\frac{a}{b} \times \frac{c}{d} = \frac{a \times c}{b \times d}$

Eg . 1) $\frac{8}{15} \times 10 = \frac{8}{15} \times \frac{10}{1} = \frac{80}{15} = \frac{16}{3} = 5\frac{1}{3}$

a. $\frac{\cancel{9}}{\cancel{16}_{4}} \times \frac{\cancel{4}}{\cancel{27}_{3}} = \frac{1}{12}$

Eg. 2) $4\frac{2}{3} \times 3\frac{3}{7} \times 2\frac{1}{6}$

$= \frac{\cancel{2}}{\cancel{14}_{3}} \times \frac{\cancel{4}}{\cancel{24}_{7}} \times \frac{13}{\cancel{6}}$

$= \frac{2 \times 4 \times 13}{3} = \frac{104}{3} = 34\frac{2}{3}$

Reciprocal or multiplication inverse of fraction

If the product of two fraction is 1 then each is called the reciprocal of the other.

$\{\frac{a}{b} \times \frac{b}{a}\} = 1$, So the reciprocal of $\frac{a}{b} = \frac{b}{a}$

Eg . $\frac{1}{6} = \frac{6}{1}$, $4 = \frac{1}{4}$

Division of fraction

If $\frac{a}{b}$ & $\frac{c}{d}$ are two fractions, then

$(\frac{a}{b} \div \frac{c}{d}) = \frac{a}{b} \times \frac{d}{c} = \{\frac{a}{b} \times$ reciprocal of $\frac{c}{d}\}$

Eg. $\frac{5}{14} \div \frac{2}{7}$

$= \frac{5}{\cancel{14}_{2}} \times \frac{\cancel{7}}{2} = \frac{5}{4} = 1\frac{1}{4}$

Word Problems On Fractions

Q . 1) From a rope of length $25\frac{1}{2}$ m , a piece of length $16\frac{2}{5}$ m is

cut of. Find the length of the remaining rope

Sol.. total length of the rope = $25\frac{1}{2} = \frac{51}{2}$ m

length of the piece cut off = $16\frac{2}{5}$ m = $\frac{82}{5}$ m

length of the remaining rope = $\left(\frac{51}{2} - \frac{82}{5}\right)$

$$= \frac{255 - 164}{10}$$

$$= \frac{91}{10} \text{ m} = 9\frac{1}{10} \text{ m}$$

Ex. 2) A car moves at a uniform speed of $43\frac{1}{5}$ km/ph. How much distance will it cover in $3\frac{1}{3}$ hrs.

Sol.. Distance covered in 1 hrs = $43\frac{1}{5}$ km = $\frac{216}{5}$ km

Distance covered in $3\frac{1}{3}$ hrs = $\left(\frac{\overset{72}{\cancel{216}}}{\cancel{5}} \times \frac{2}{\cancel{10}}\right)$

= 144 km

Home work :

Ex. 6.5 Question No. 3, 4

6.6 Question No. 2, 4

6.7 Question No. 1, 3, 5