

RATIO SYMBOL

eg: $\frac{\text{Age of A}}{\text{Age of B}} = \frac{7}{5}$
 age of A = 7x
 age of B = 5x

After 6 years
 age of A ! 7x + 6
 age of B ! 5x + 6
 $\frac{\text{age of A}}{\text{age of B}} = \frac{5}{4}$

$\frac{\text{ages of A}}{\text{ages of B}} = \frac{7x+6}{5x+6} = \frac{5}{4}$

Convert ratio into fraction

eg: $\frac{4}{7} > \frac{3}{7}$ Compare numerator when Denominator same

eg: $\frac{5}{4} < \frac{5}{3}$ When Numerator same Compare denominator

eg: $\frac{1}{3} < \frac{2}{5}$ find L.C. M. of denominators
 L.C.M. of (3,5)=15
 $\frac{1 \times 5}{3 \times 5} = \frac{5}{15}$; $\frac{2 \times 3}{5 \times 3} = \frac{6}{15}$
 $\Rightarrow 6 : 15 > 5 : 15$

If a : b is in simplest form $\Rightarrow$ H.C.F. (a, b)=1

eg: $\frac{18}{27} = \frac{18 \div 9}{27 \div 9} = \frac{2}{3}$ H.C.F. of 18 and 27 is 9
 H.C.F. of 2 and 3 is 1

Comparison of two ratios

Simplest form/lowest term

Ratio (:) The ratio of a number 'a' to another no. b [b $\neq$ 0] is fraction and is written as a : b a and b should be of same kind a : b = $\frac{a}{b} \rightarrow$ antecedent b $\rightarrow$ consequent

The ratio of a number 'a' to another no. b [b $\neq$ 0] is fraction and is written as a : b

To compare two quantities, the units must be the same
 eg : ratio of 3 km to 3m
 3km : 3m = 3000 m : 3m
 = 1000 : 1

a and b should be of same kind

a : b = $\frac{a}{b} \rightarrow$ antecedent
b $\rightarrow$ consequent

Equivalent Ratio

$1 : 2 = 2 : 4 = 3 : 6$
 $\frac{1}{2} = \frac{2}{4} = \frac{3}{6}$
 or. $\frac{1}{2} = \frac{1 \times 2}{2 \times 2} = \frac{1 \times 3}{2 \times 3}$

eg : divide Rs. 5000 in Ratio 3 : 5

Rs. 5000 $\times \frac{3}{3+5} =$ Rs. 5000 $\times \frac{3}{8} =$ Rs. 1875

Rs. 5000 $\times \frac{5}{3+5} =$ Rs. 5000 $\times \frac{5}{8} =$ Rs. 3125

eg : If A : B = 2 : 3 and B : C = 5 : 4

then A : C = $\frac{A}{B} \times \frac{B}{C} = \frac{2}{3} \times \frac{5}{4} = \frac{5}{6}$
 A : C = 5 : 6

eg : If 3A = 2B = 5C the find A : B : C

Let 3A = 2B = 5C = K (K $\neq$ 0)

$\therefore 3A = K$; $2B = K$; $5C = K$

$A = \frac{K}{3}$; $B = \frac{K}{2}$; $C = \frac{K}{5}$

L.C.M. (3,2,5) = 30

$A = \frac{10 \times K}{10 \times 3}$; $B = \frac{15 \times K}{15 \times 2}$; $C = \frac{6 \times K}{6 \times 5}$

$\therefore A : B : C = 10 : 15 : 6$