Ratio

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→ Ratio of a and b is written as

$$a:b = \frac{a}{b} = a \div b.$$

⇒ Types of Ratio.

i) Compound Ratio :-

Ex: $\frac{2}{3} \times \frac{4}{5} \times \frac{6}{7} = \frac{2 \times 4 \times 6}{3 \times 5 \times 7} = \frac{48}{105}$

ii) Duplicate Ratio :-

Ex: $a:b$ is $a^2 : b^2$

$7:5$ is $49:25$

iii) Triplicate Ratio

$a:b$ is $a^3 : b^3$

Ex: $3:2$ is $27:8$

iv) Sub duplicate

$a:b$ is $a^{1/2} : b^{1/2}$

$9:16$ is $3:4$

v) Sub triplicate Ratio

$a:b$ is $a^{1/3} : b^{1/3}$

$27:125$ is $3:5$

⇒ Properties of Ratio.

Comparision Ratio.

Let $a:b$ and $c:d$ we have two ratio. then

$a:b > c:d$ if $ad > bc$ $\left[\because \frac{a}{b} > \frac{c}{d} \Rightarrow ad > bc\right]$

$a:b < c:d$ if $ad < bc$

$a:b = c:d$ if $ad = bc$

some imp results

if $\frac{a}{b} > 1$, it is implied that $a > b$

$\frac{a}{b} < 1$ if $a < b$

$\frac{a}{b} = 1$ if $a = b$. //