

Quantitative Aptitude

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Chapter 1

Speed Distance Time

1.1 Basic Formulae

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$

$$\text{Time} = \frac{\text{Distance}}{\text{Speed}}$$

$$\text{Distance} = \text{Speed} \times \text{Time}$$

1.2 KM/hr and m/s relation

$$x \text{ Km/hr} = \frac{5}{18} x \text{ m/s}$$

$$x \text{ m/s} = \frac{18}{5} x \text{ Km/hr}$$

1.3 Variance of Speed and time

$$\begin{aligned} \text{Speed} &= a : b \\ \Rightarrow \text{Time} &= \frac{1}{a} : \frac{1}{b} \\ &= b : a \end{aligned}$$

If the ratio of speed of A and B is a:b then the ratio of time taken by them to cover the same distance is b:a.

1.4 Average Speed

1.4.1 Equal Distances

For Equal Distance and speeds x Km/h and y Km/h,

$$\text{Average Speed} = \frac{2xy}{x+y}$$

1.4.2 Unequal Distances

$$\text{Average Speed} = \frac{\text{Total Distance}}{\text{Total Time}}$$