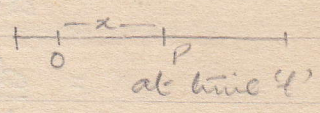


Chapter 8

Rectilinear Motion

The motion of a body (or a particle) along a straight line is called rectilinear motion.

Displacement = x



velocity $\Rightarrow v = \frac{dx}{dt}$

Acc $\Rightarrow a = \frac{dv}{dt} \rightarrow (1)$

$a = \frac{d}{dt} \left(\frac{dx}{dt} \right)$

or $a = \frac{d^2x}{dt^2} \rightarrow (2)$

$a = \frac{dv}{dt}$

$a = \frac{dv}{dx} \cdot \frac{dx}{dt}$

$a = v \frac{dv}{dx} \rightarrow (3)$

$v = \frac{dx}{dt}$

$a = \frac{dv}{dt}, \frac{d^2x}{dt^2} \text{ or } v \frac{dv}{dx}$