

# VELOCITY

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Date	1 <sup>st</sup> December, 2022

Velocity is the direction of an object or a body. It is the rate of change of displacement. It is measured in m/s. It is a vector quantity. The dimension of velocity is  $LT^{-1}$

## Formulas:

$$V = s/t$$

Where v is the velocity, s is the displacement and t is the time taken.

$$V = u + at$$

Where v is velocity, u is initial velocity, a is acceleration and t is time

$$V^2 = u^2 + 2as$$

Where v is velocity, u is initial velocity, a is acceleration and s is distance

## Example:

Find the velocity of an object with an initial velocity of 20m/s, acceleration of the object is 10m/s<sup>2</sup> at 15seconds.

### Solution

$$U = 20\text{m/s}, a = 10\text{m/s}^2, t = 15\text{seconds and } v = ?$$

$$V = u + at$$

$$V = 20 + (10 \times 15)$$

$$V = 20 + 150$$

$$V = 170\text{m/s.}$$