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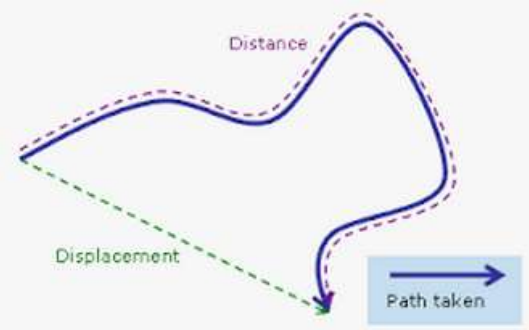
# Kinematics




$Distance \geq 0$

$Speed \geq 0$

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

Scalar:
Magnitude

$$Velocity = \frac{Displacement}{Time}$$

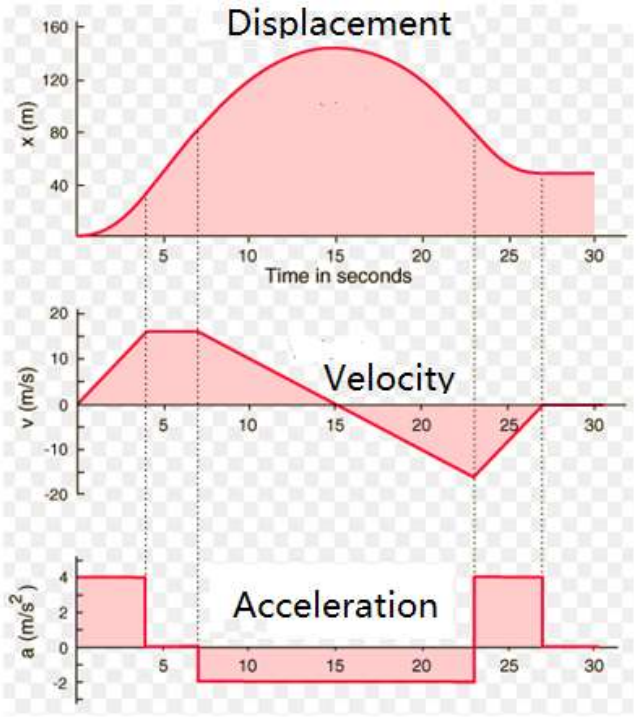
Vector:
Manitude and Direction

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

$$1km/h = \frac{1000m}{3600s} = 0.278m/s$$

$$Acceleration = \frac{velocity\ change}{time}$$

Free fall object acceleration:
$10ms^{-2}$ towards earth.




Gradient = velocity

Area under graph = Displacement
Gradient = Acceleration

Area under graph = Velocity