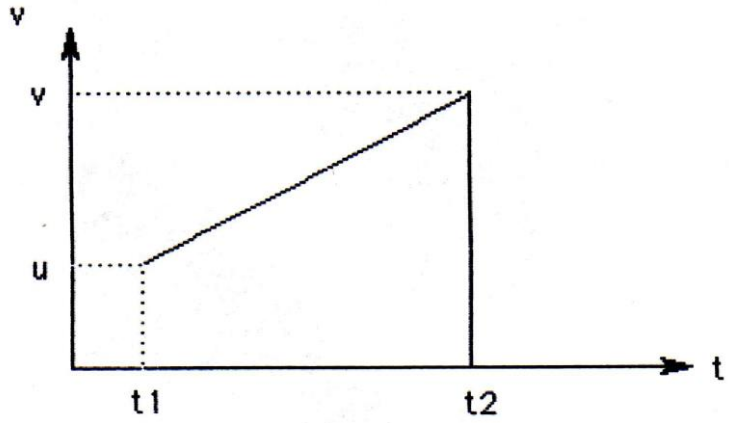
M.2.6 Constant Acceleration Formulae

We know the shape of a *v*-*t* graph when the acceleration is constant. It is a straight line as shown.



Definitions

a = acceleration
x = displacement
v = final velocity
u = initial velocity
t = time taken $(t_2 - t_1)$

Again these were dealt with in detail in unit 2.

$$v = u + at$$

$$x = ut + \frac{1}{2}at^2$$

$$x = vt - \frac{1}{2}at^2$$

$$x = \frac{(u+v)t}{2}$$

$$v^2 = u^2 + 2ax$$

These five formulae are known as the constant acceleration formulae.