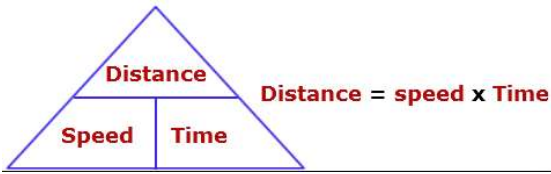


Physics Equations

Physics I

Speed:



Velocity:

$$v = \frac{\Delta x}{t}$$

v = velocity
 x = position
 t = time

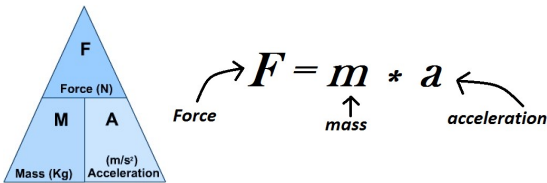
Acceleration:

$$a = \frac{v - v_0}{t} = \frac{\Delta v}{\Delta t}$$

a is average acceleration,
 Δv is change in velocity, and
 Δt is change in time

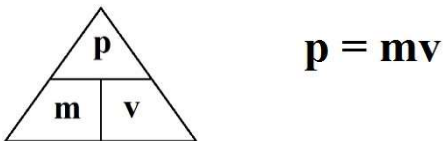
Physics II

Force:



acceleration due to gravity is 9.8 m/s^2 so weight is a measurement of the force of gravity on the mass of an object

Momentum:



Impulse:

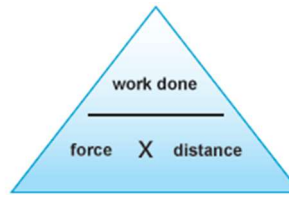
Change in momentum: $\Delta p = mv_f - mv_i$

Force applied over time to object:

$$F\Delta t = m\Delta v \quad \Delta p = F\Delta t$$

Physics III

Work:

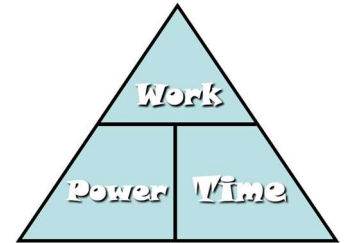


work = Force x distance

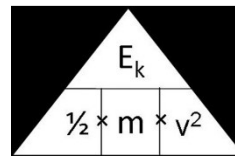
Power:

Power = $\frac{\text{work}}{\text{time}}$

Power = $\frac{Fxd}{\text{time}}$

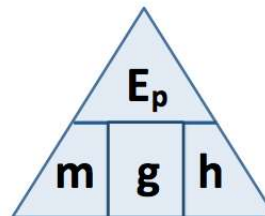


Kinetic energy:



E_k = kinetic energy of object
 m = mass of object
 v = speed of object

Potential energy:



E_p = potential energy
 m = mass in kg
 g = gravity (9.8 m/s^2)
 h = height in meters

Mechanical energy:

$$E_T = PE_g + KE \quad E_T = mgh + \frac{1}{2}mv^2$$

Physics IV

Heat energy:

$$Q = mc\Delta t$$

Q = heat energy in JOULES (J)
 m = mass of the sample in GRAMS (g)
 C = specific heat in $\text{J/g}^\circ\text{C}$
 Δt = change in temperature ($^\circ\text{C}$)

Wave speed:



$$v = f\lambda$$

v = speed of wave (m/s)
 f = frequency of wave (Hz)
 λ = wavelength (m)