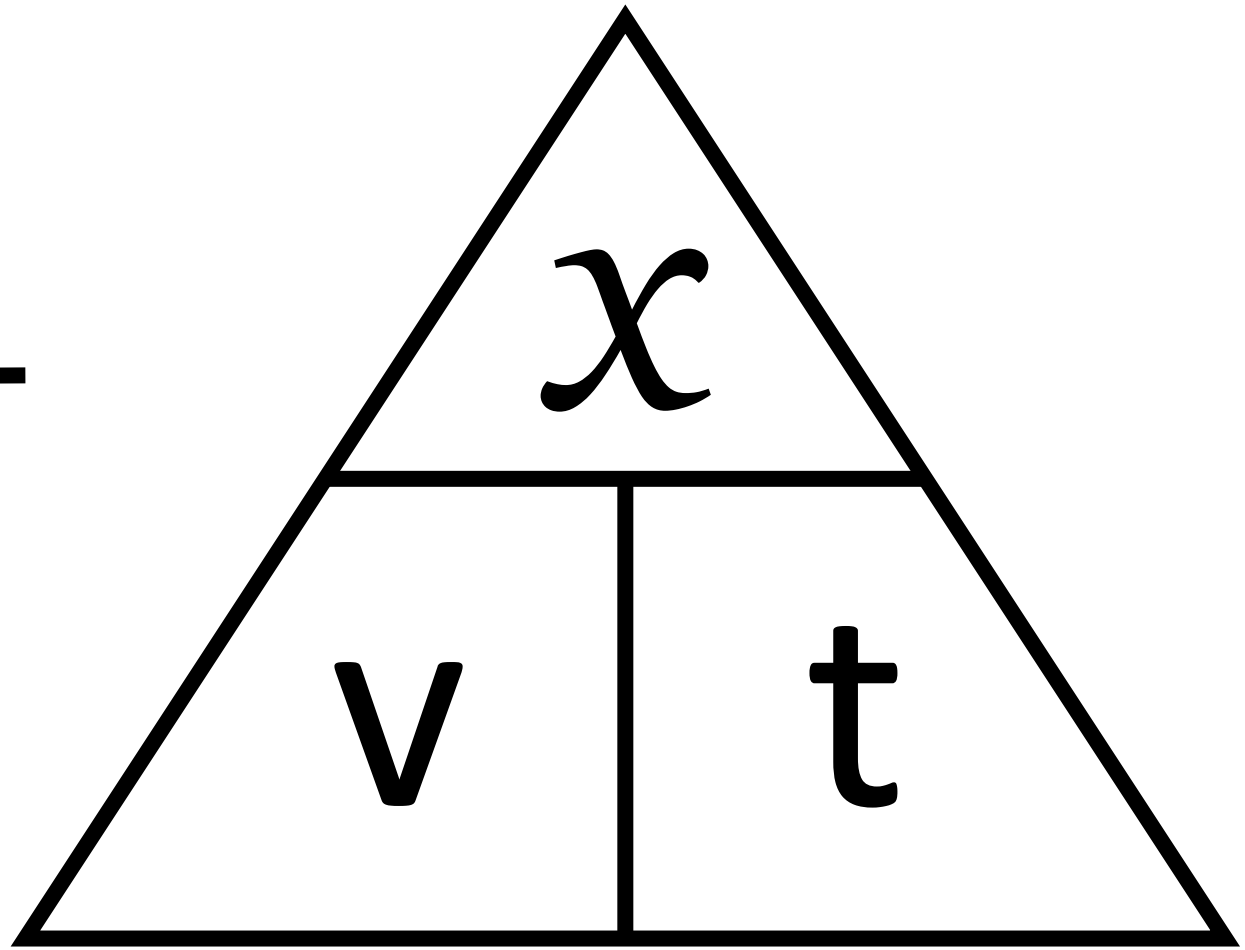
Average speed= $\frac{\text{total distance (m)}}{\text{time (s)}}$

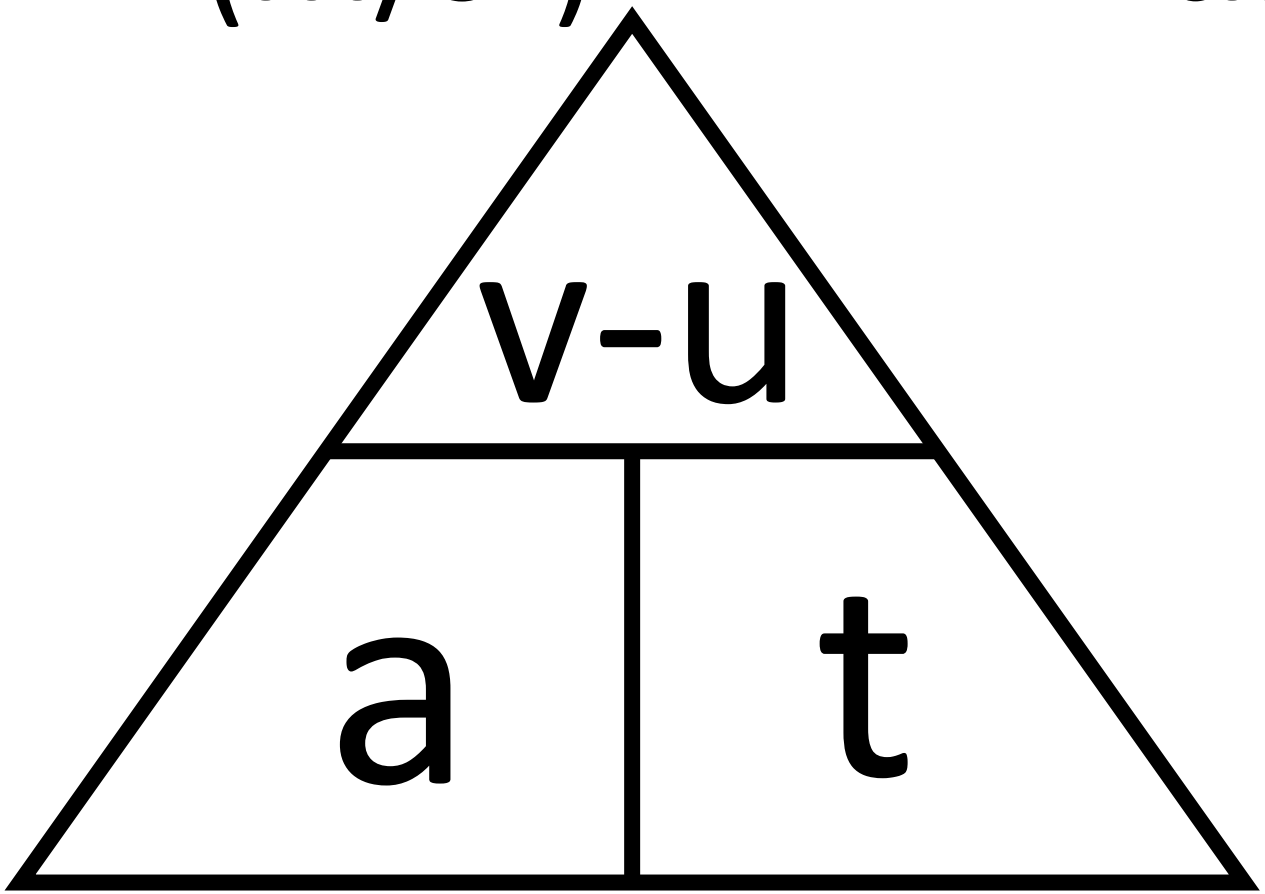
(m/s)

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



Acceleration = change in velocity (m/s) / time taken (s)

(m/s²)



$$a = \frac{v-u}{t}$$

v = final velocity

u = initial velocity

For constant acceleration;

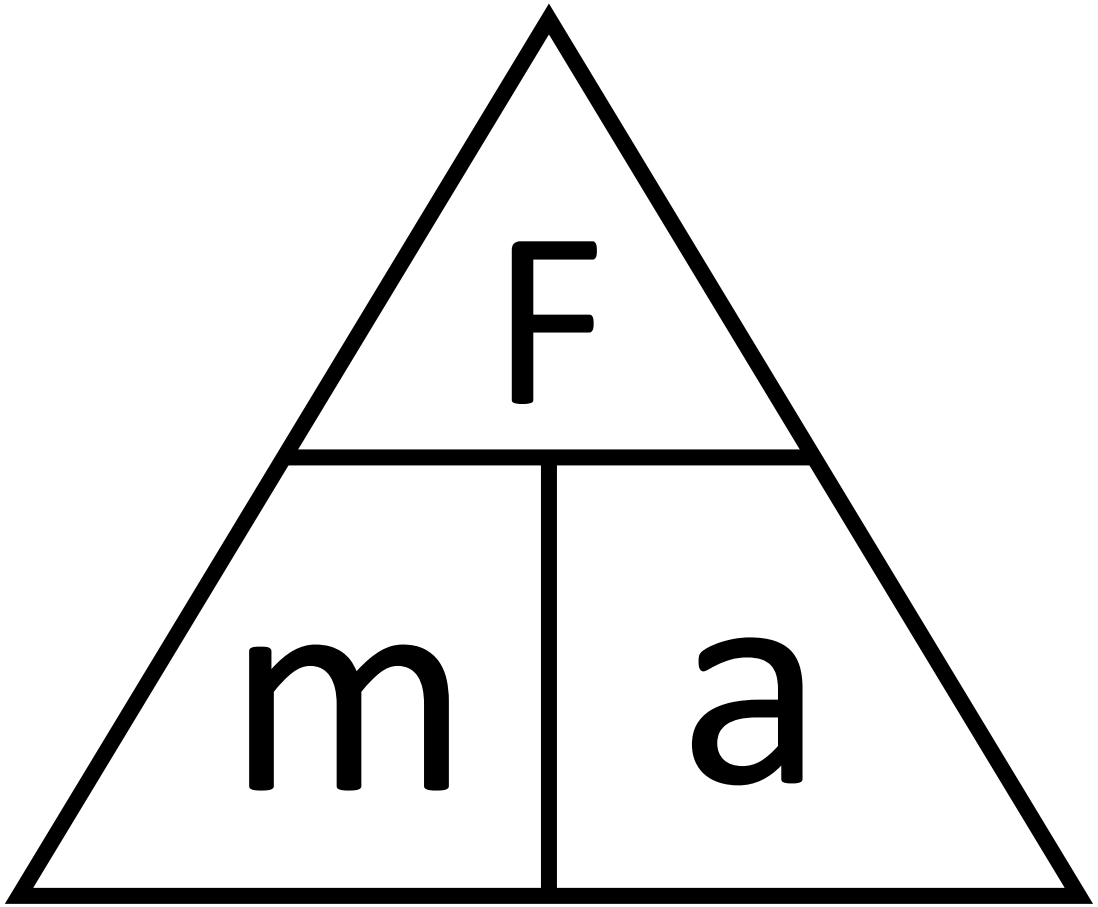
$$v^2 - u^2 = 2ax$$

v = final velocity (m/s)
u = initial velocity (m/s)
a = acceleration (m/s^2)
x = displacement (m)

Force = mass x acceleration

(N) (kg) (m/s^2)

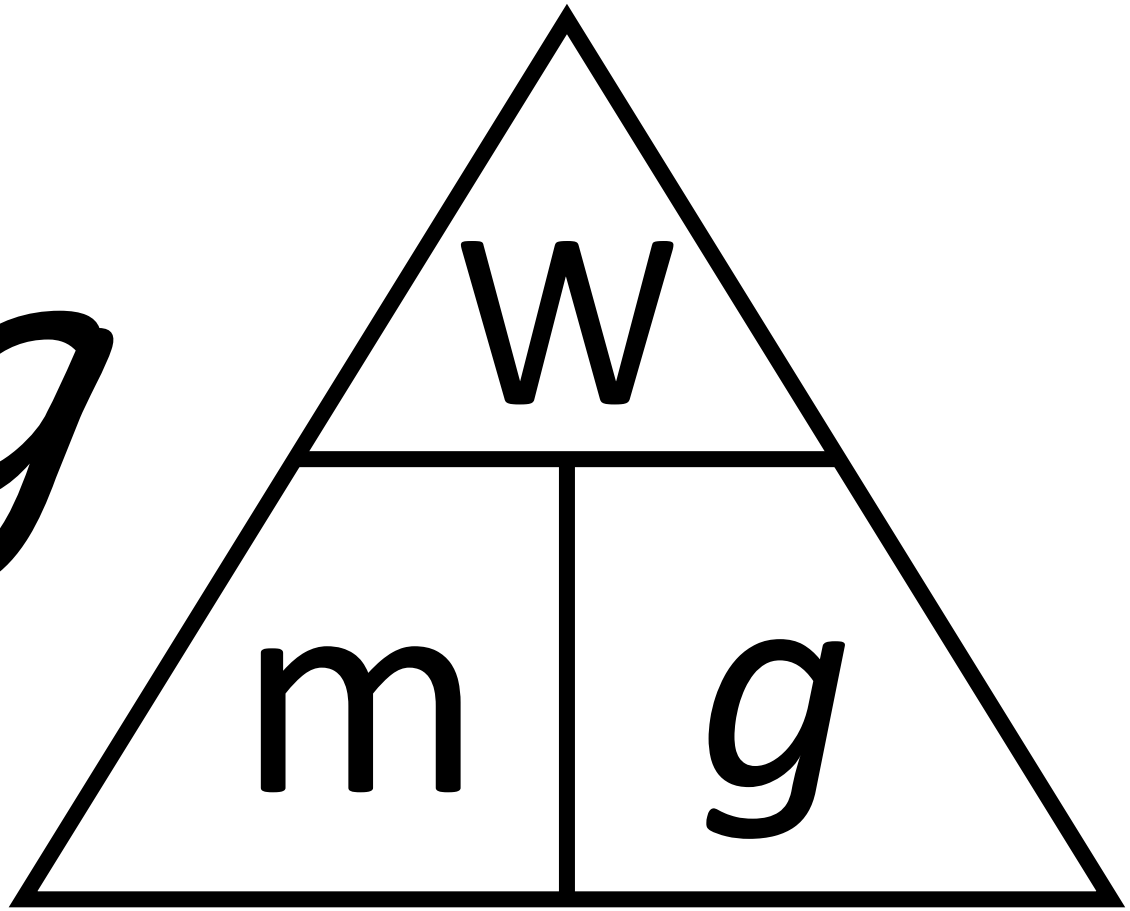
$$F = m\,a$$



Weight = mass x gravitational field

(N) (kg) strength (N/kg)

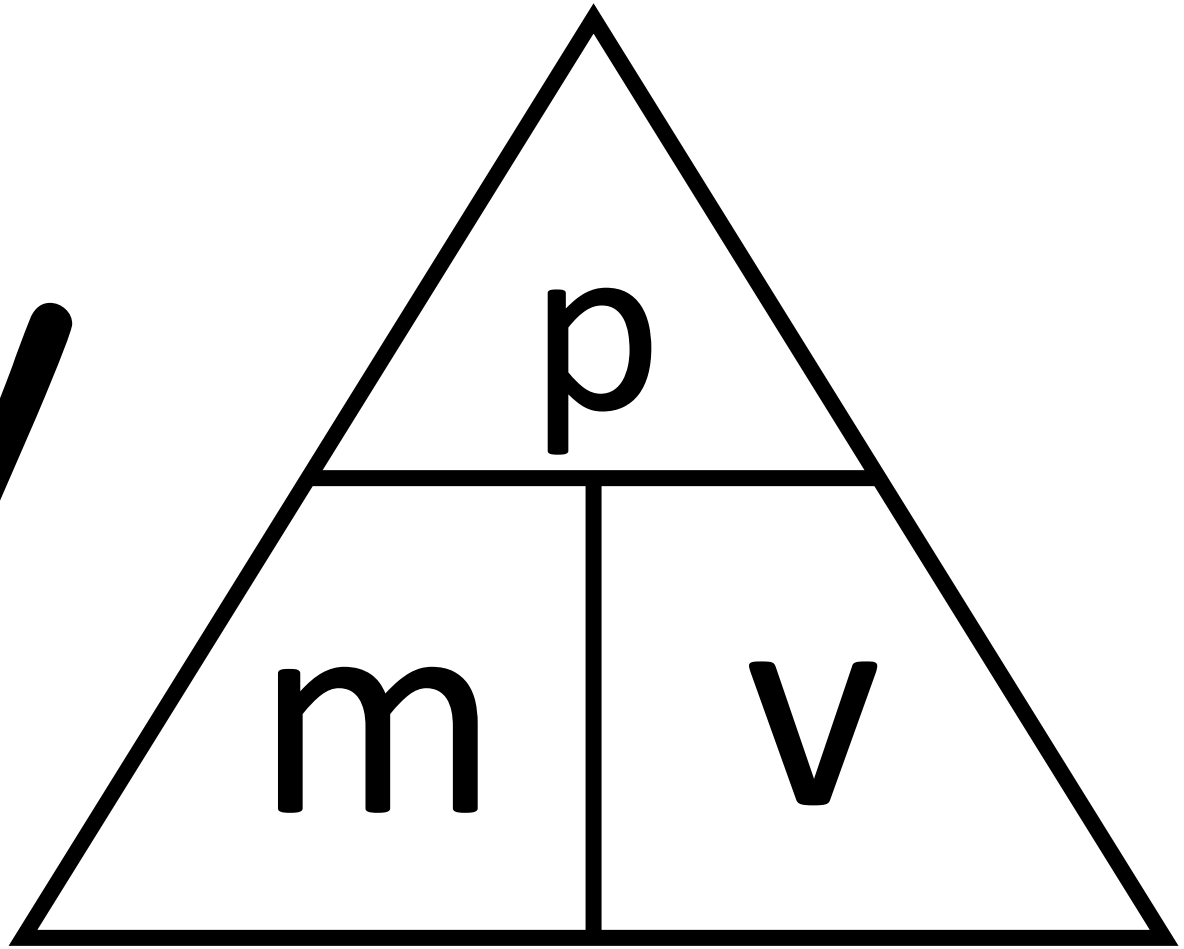
$$W = m\,g$$



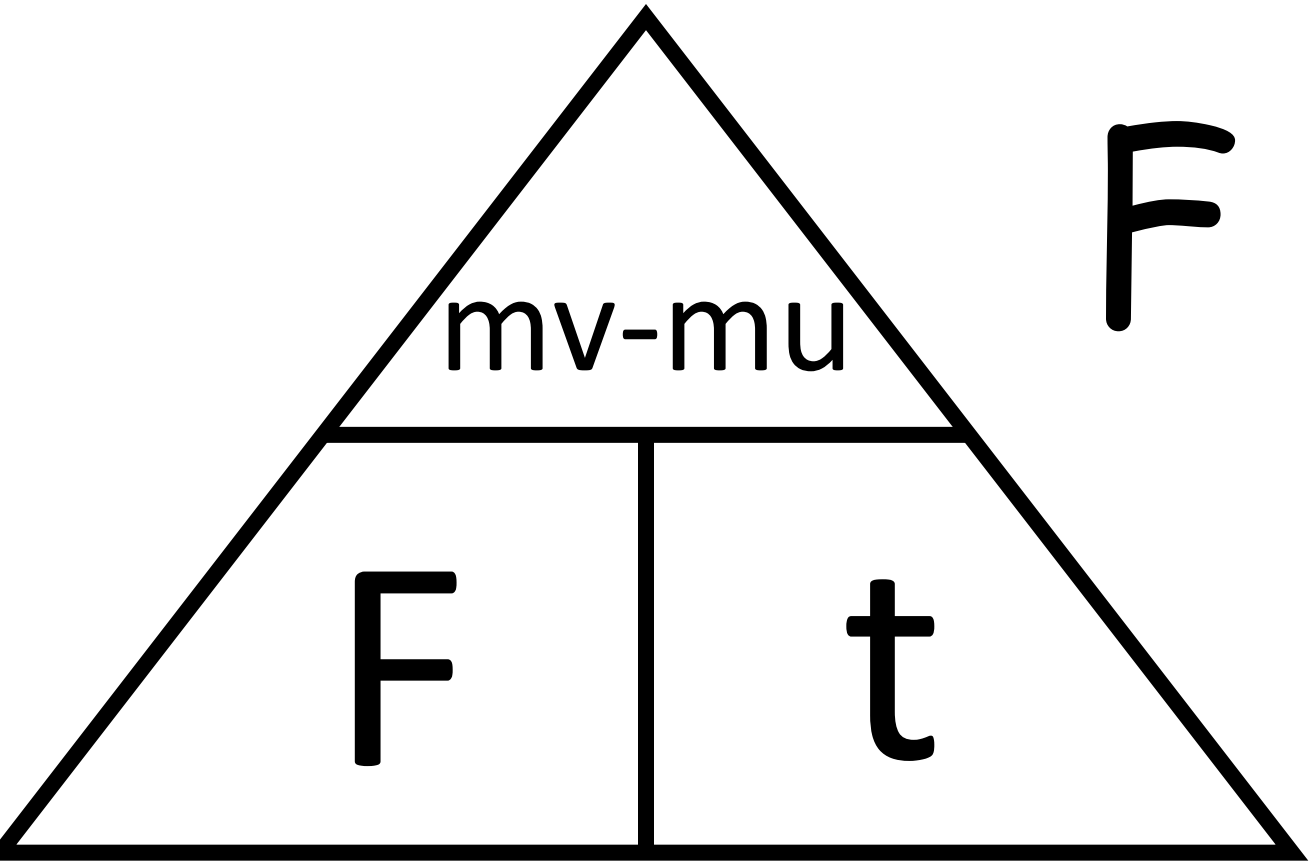
Momentum = mass x velocity

(kgm/s) (kg) (m/s)

$$p = m v$$



Force (N) = $\frac{\text{change in momentum (kgm/s)}}{\text{time taken (s)}}$



$$F = \frac{mv-mu}{t}$$

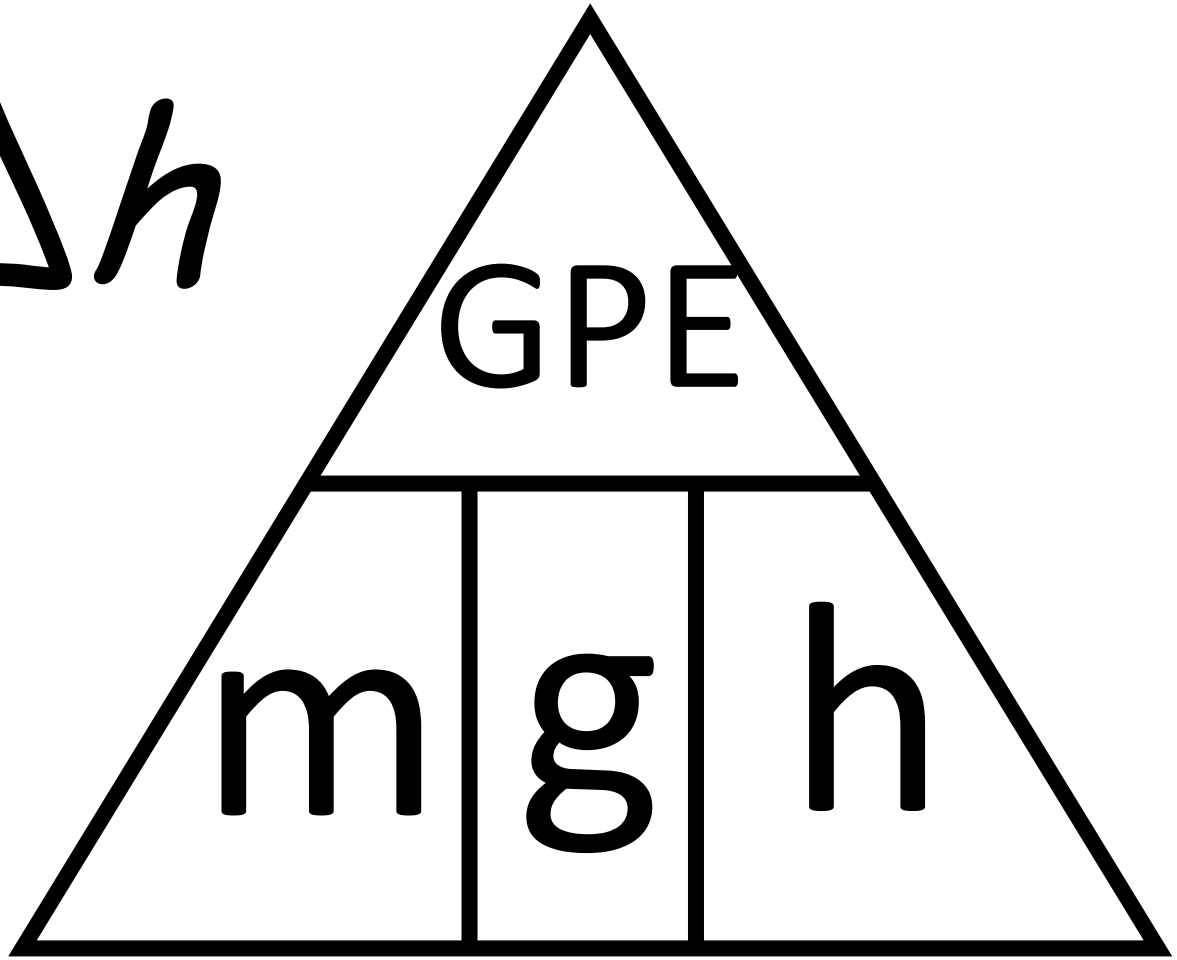
v = final velocity

u = initial velocity

Gravitational Potential Energy (J)	=	mass (kg)	x	gravitational field strength (N/kg)	x	change in height (m)

$$\Delta GPE = mg\Delta h$$

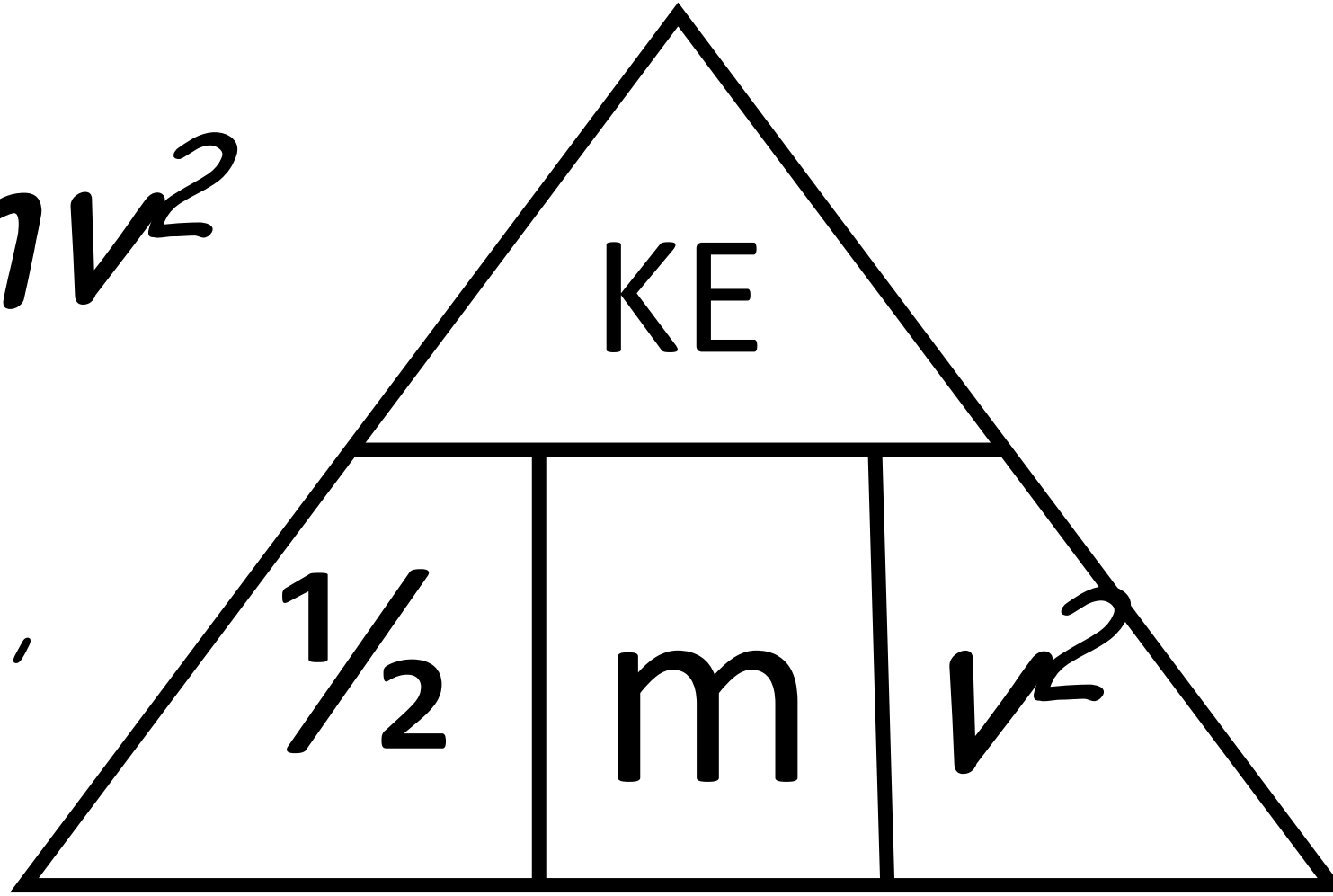
Δ means 'change in'



Kinetic Energy = $\frac{1}{2}$ x mass x *velocity*^{2}

(J) (kg) (m/s)

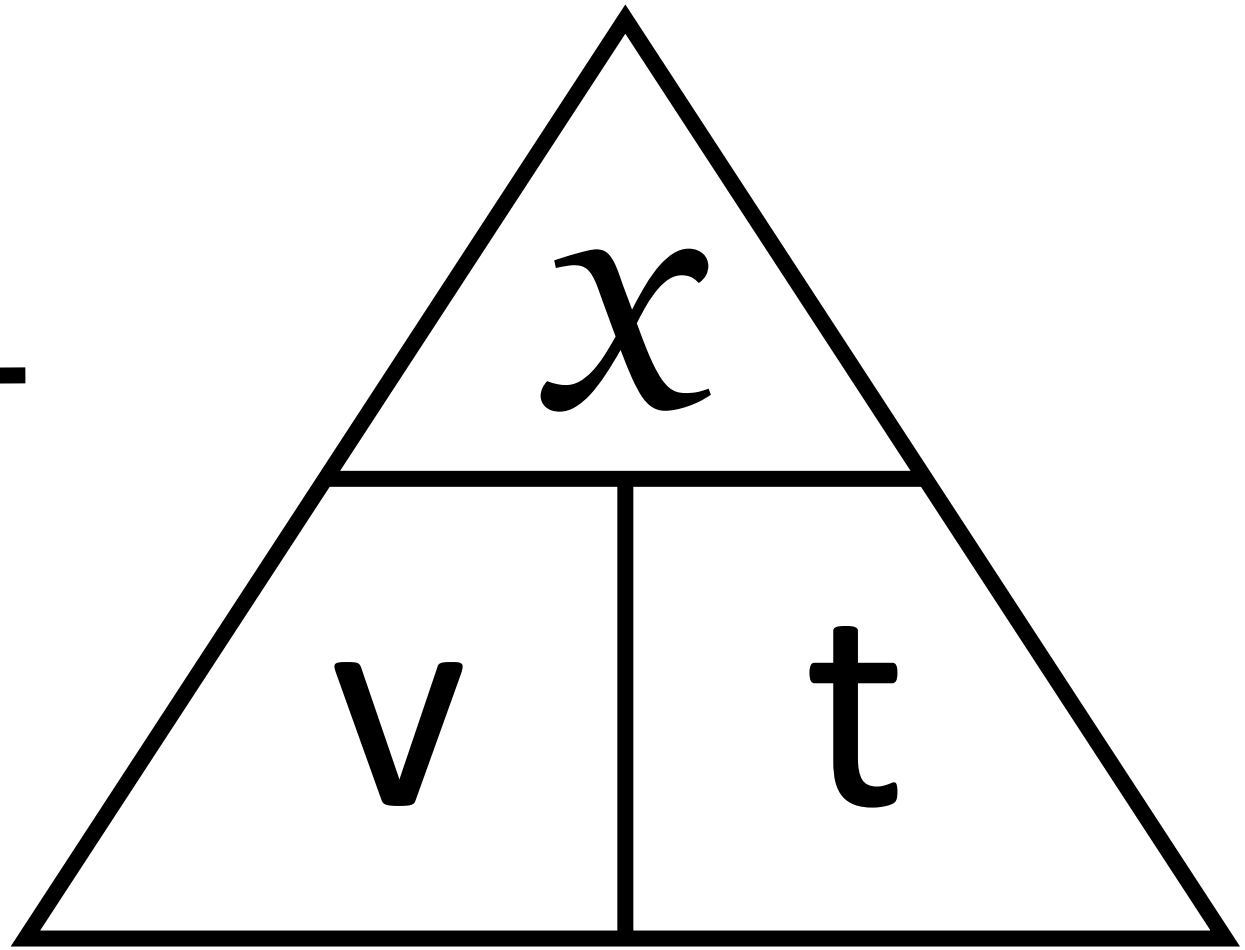
$$\Delta KE = \frac{1}{2}mv^2$$



Δ means 'change in'

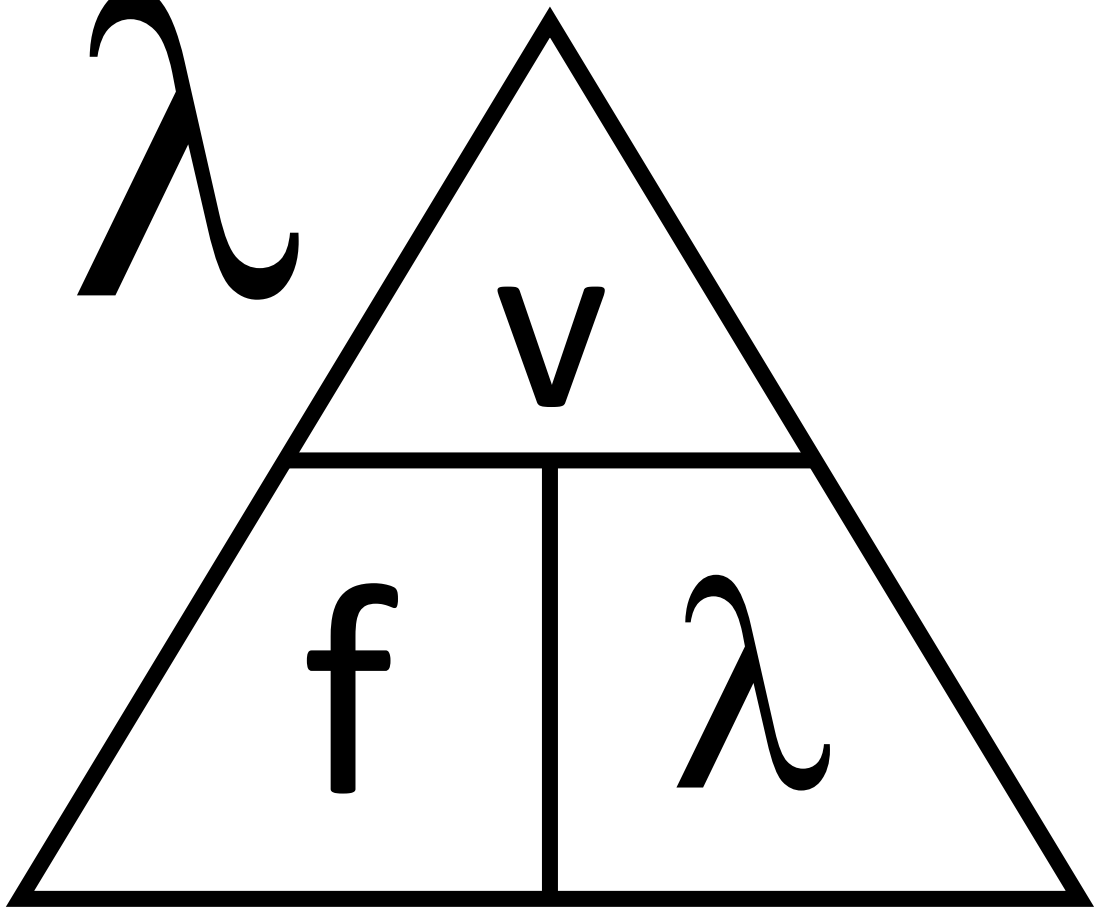
Wave speed (m/s) = $\frac{\text{distance (m)}}{\text{time (s)}}$

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



Wave speed (m/s) = frequency (Hz) x wavelength (m)

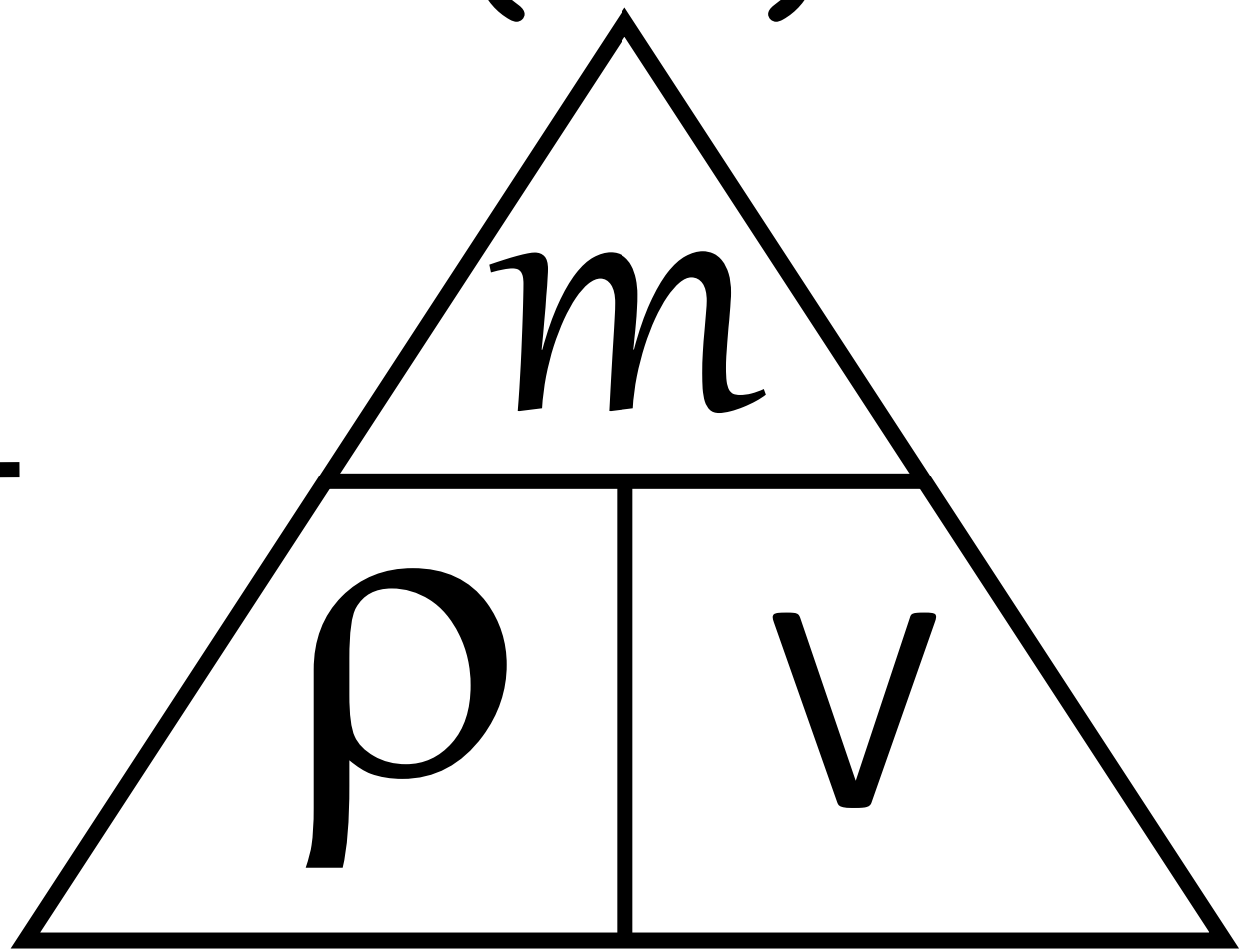
$$v = f \times \lambda$$



$$\text{Density} = \frac{\text{mass (kg)}}{\text{volume (m}^3\text{)}}$$

(kg/m^3)

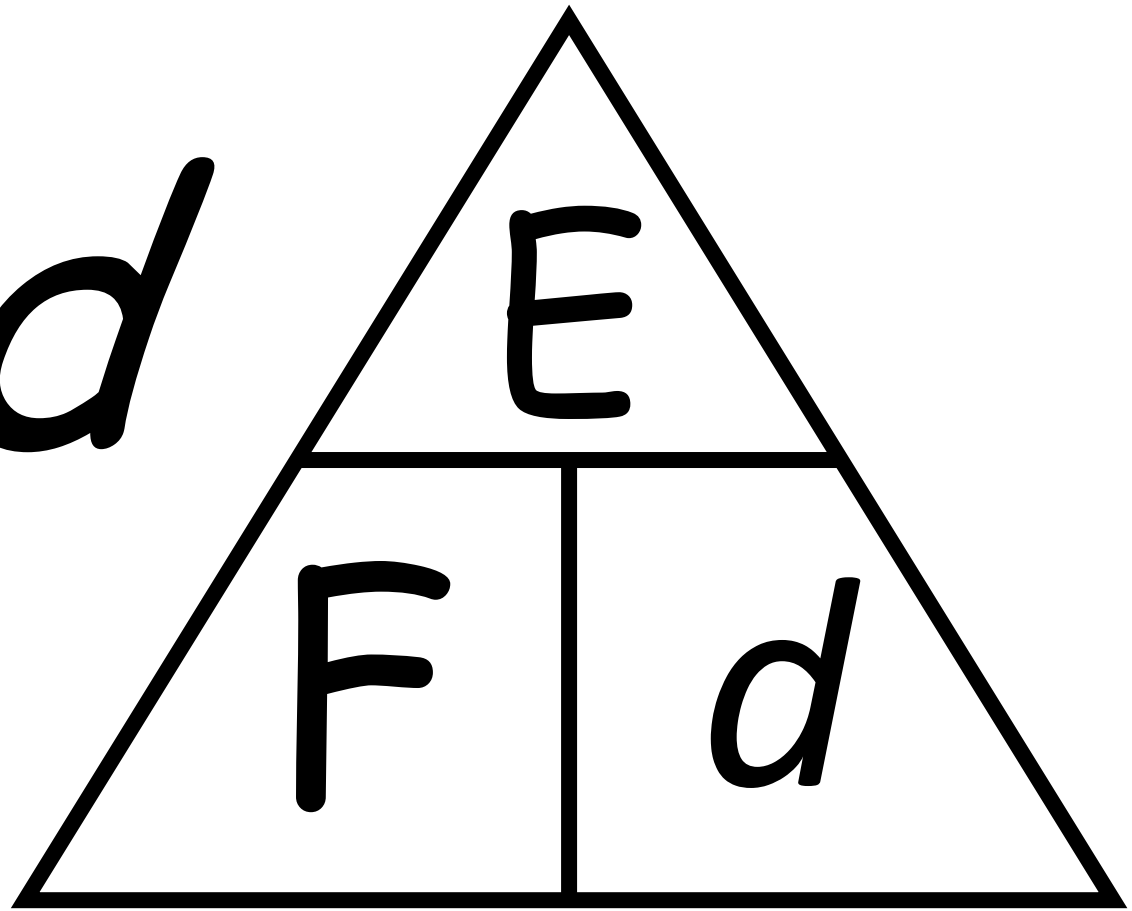
$$\rho = \frac{m}{V}$$



Work = force x distance moved in

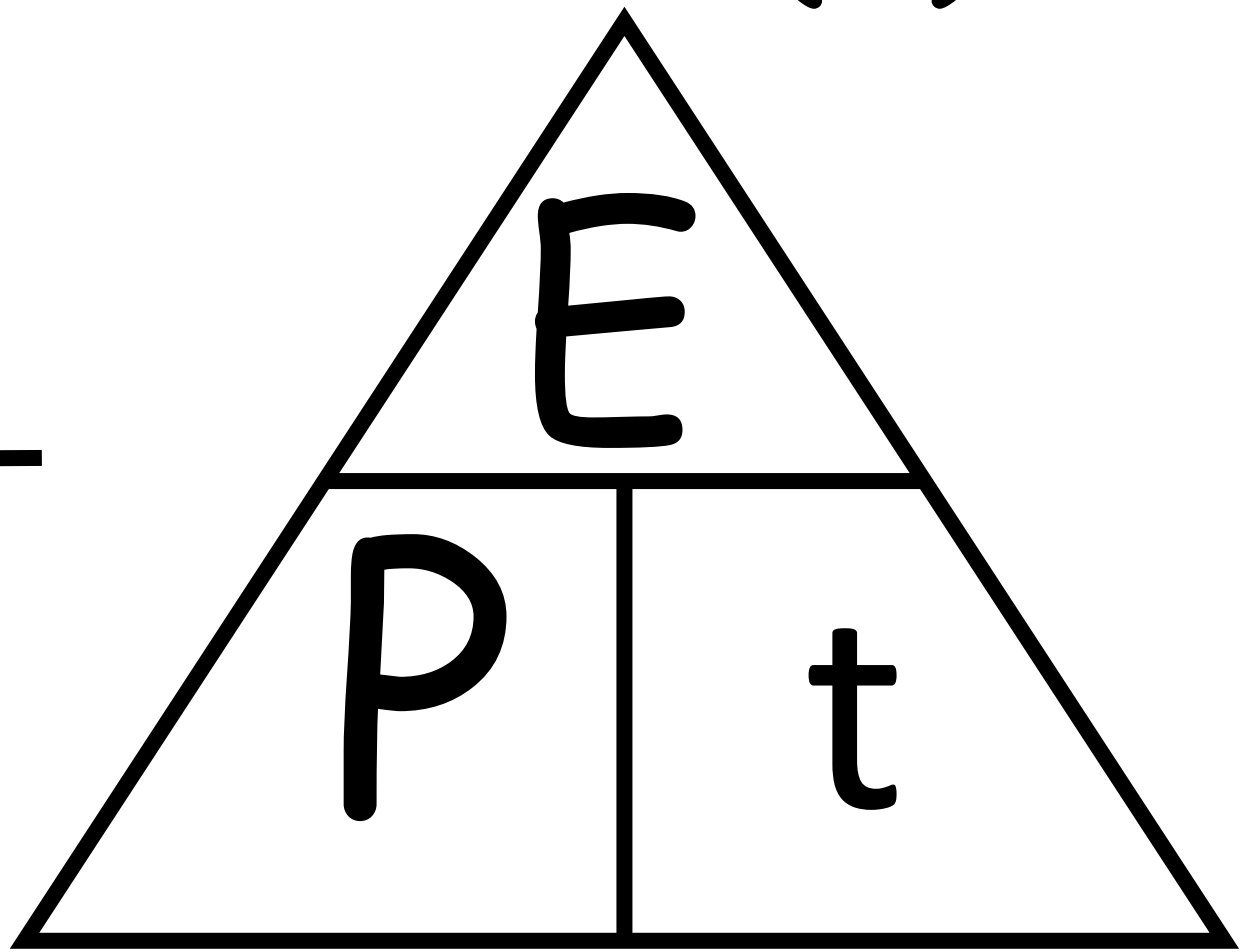
done (J) (N) direction of force (m)

$$E = F \times d$$



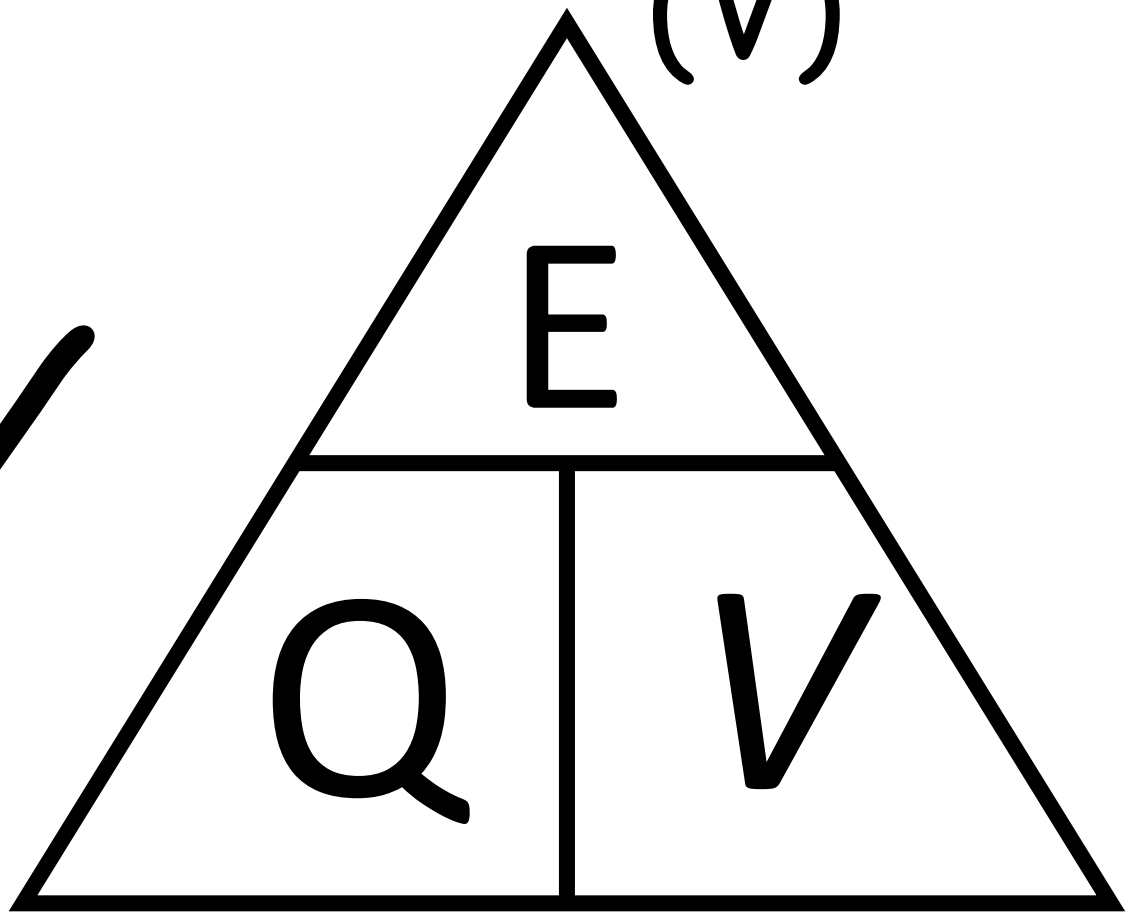
Power (W) = work done (J) / time taken (s)

$$P = \frac{E}{t}$$



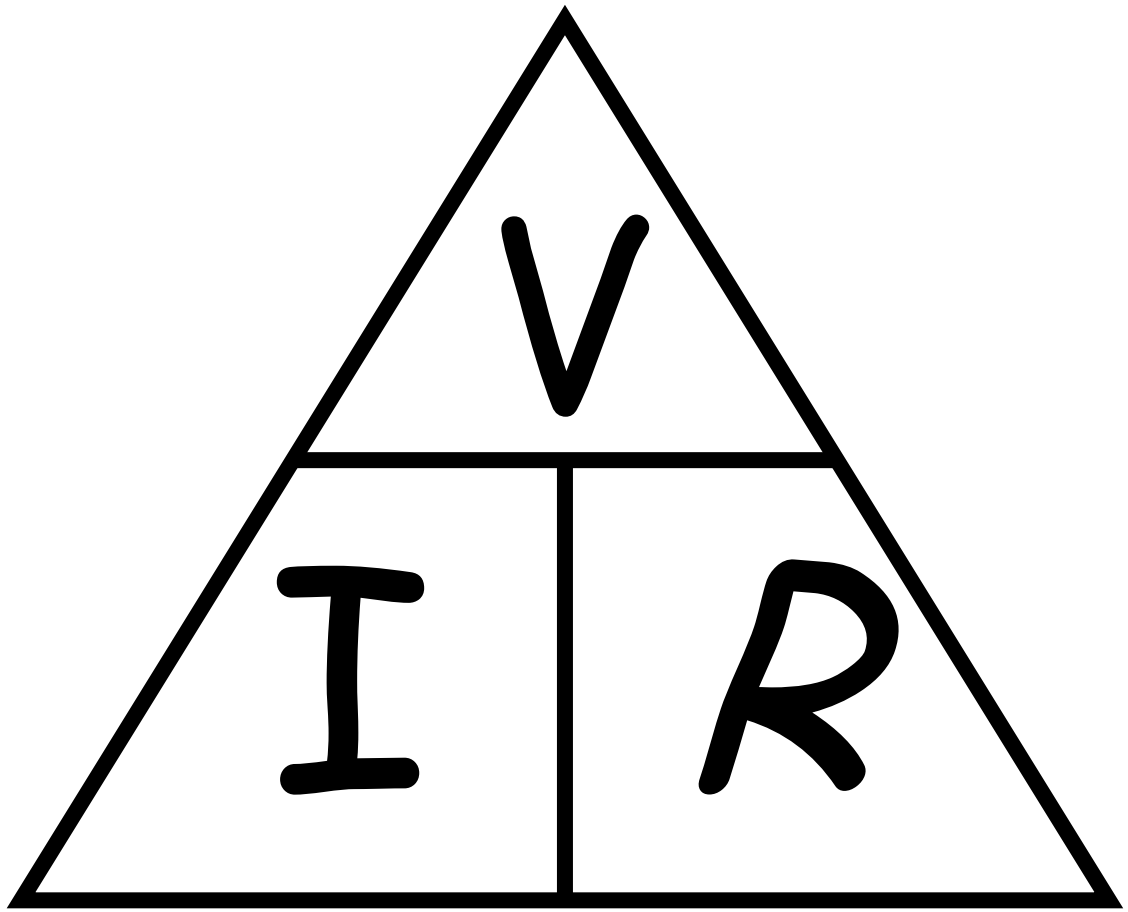
Energy transferred (J) = charge moved (C) x potential difference (V)

$$E = Q \times V$$



Potential difference (V) = current (A) x resistance (Ω)

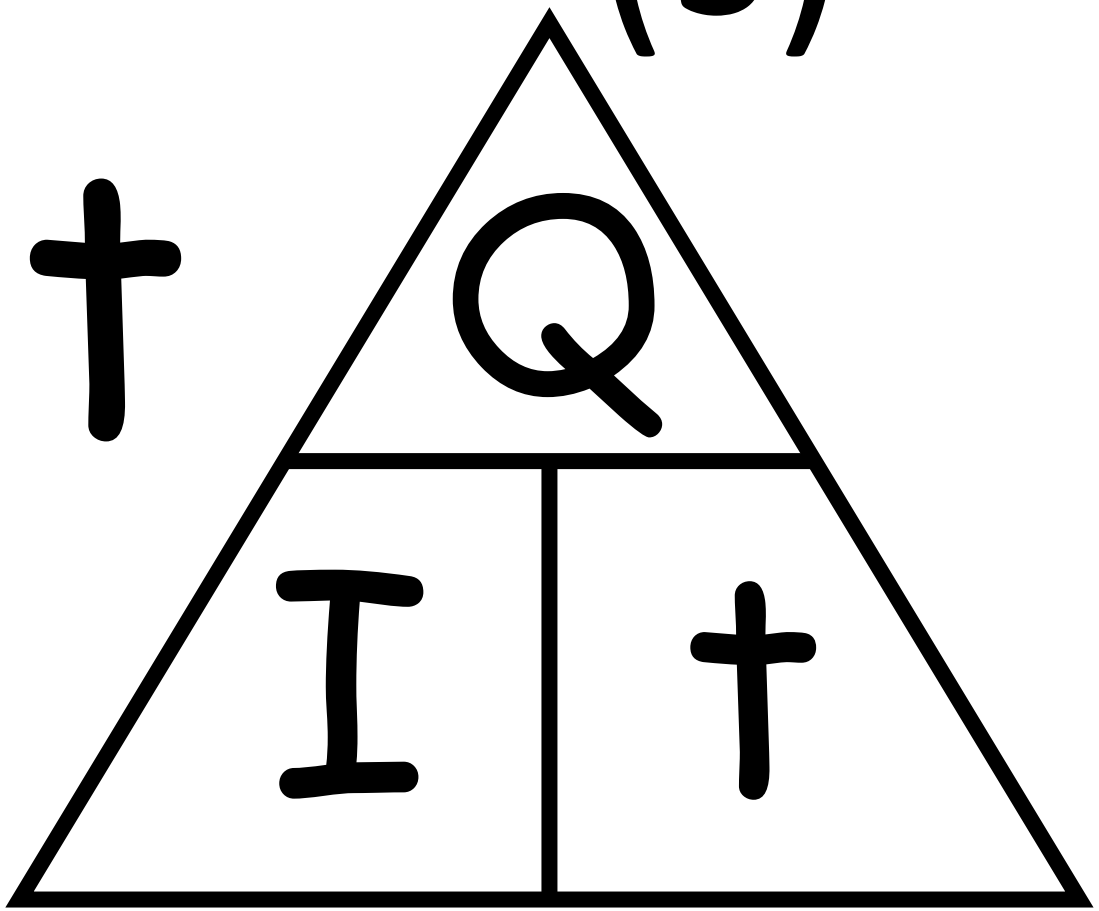
$$V = I \times R$$



Charge = current x time

(C) (A) (s)

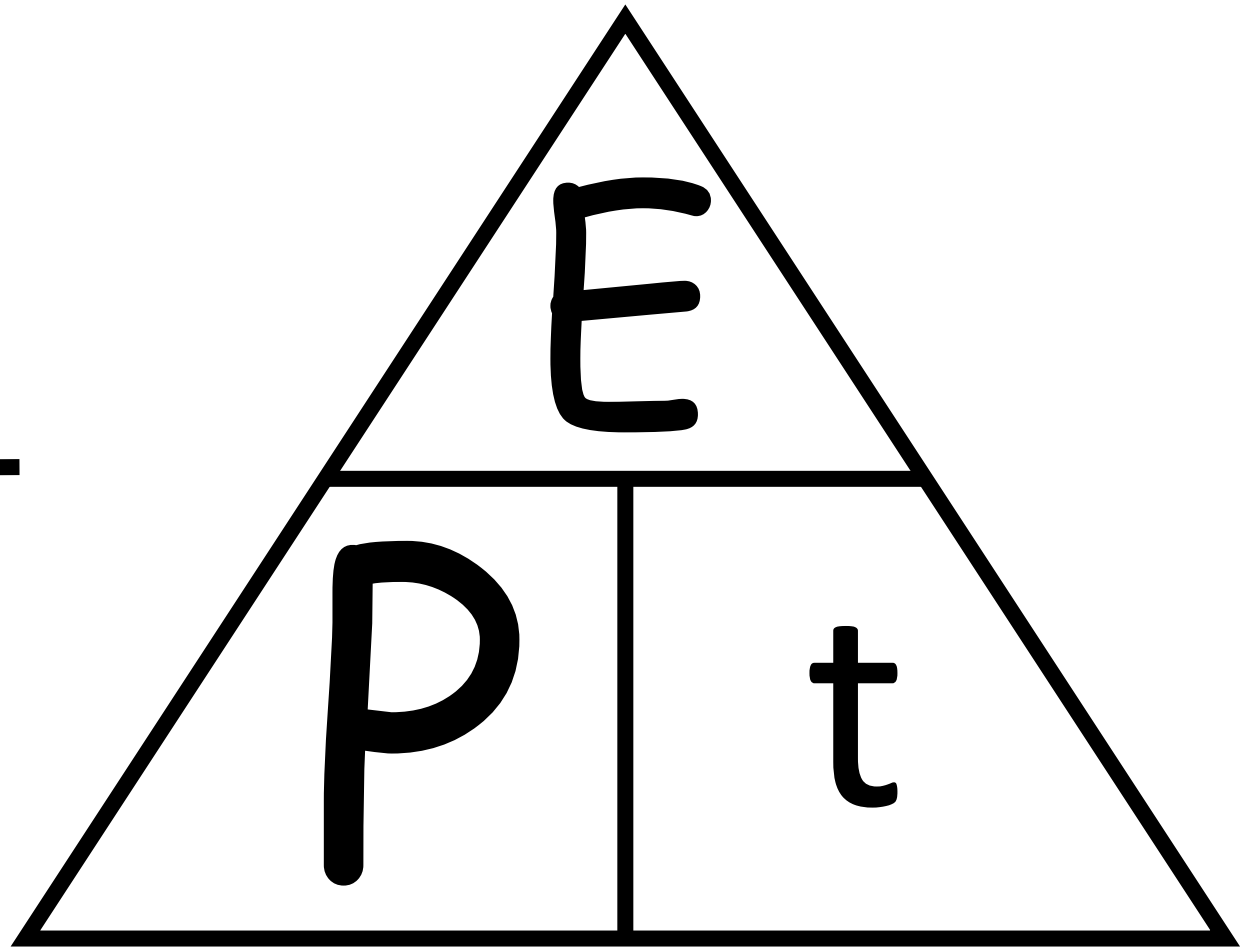
$$Q = I \times t$$



Power = $\frac{\text{energy transferred (J)}}{\text{time taken (s)}}$

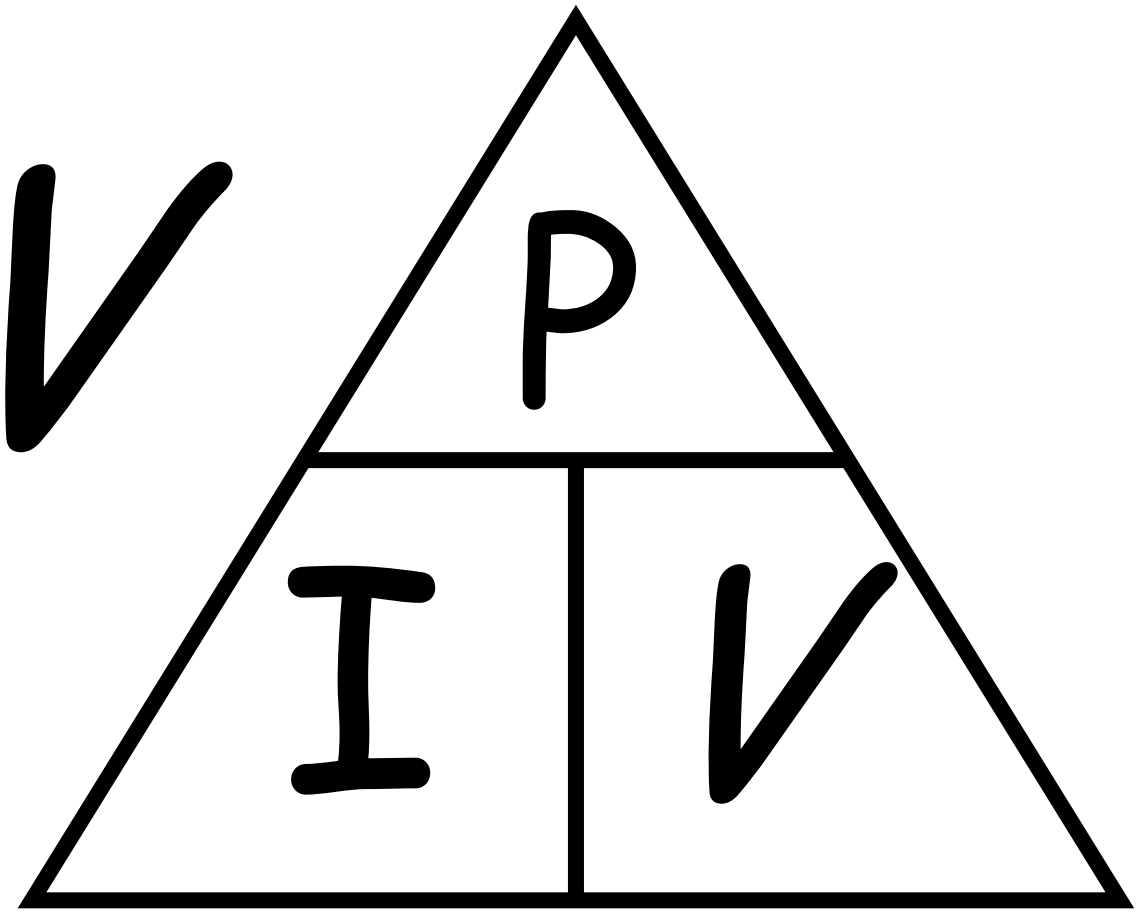
(W)

$$P = \frac{E}{t}$$



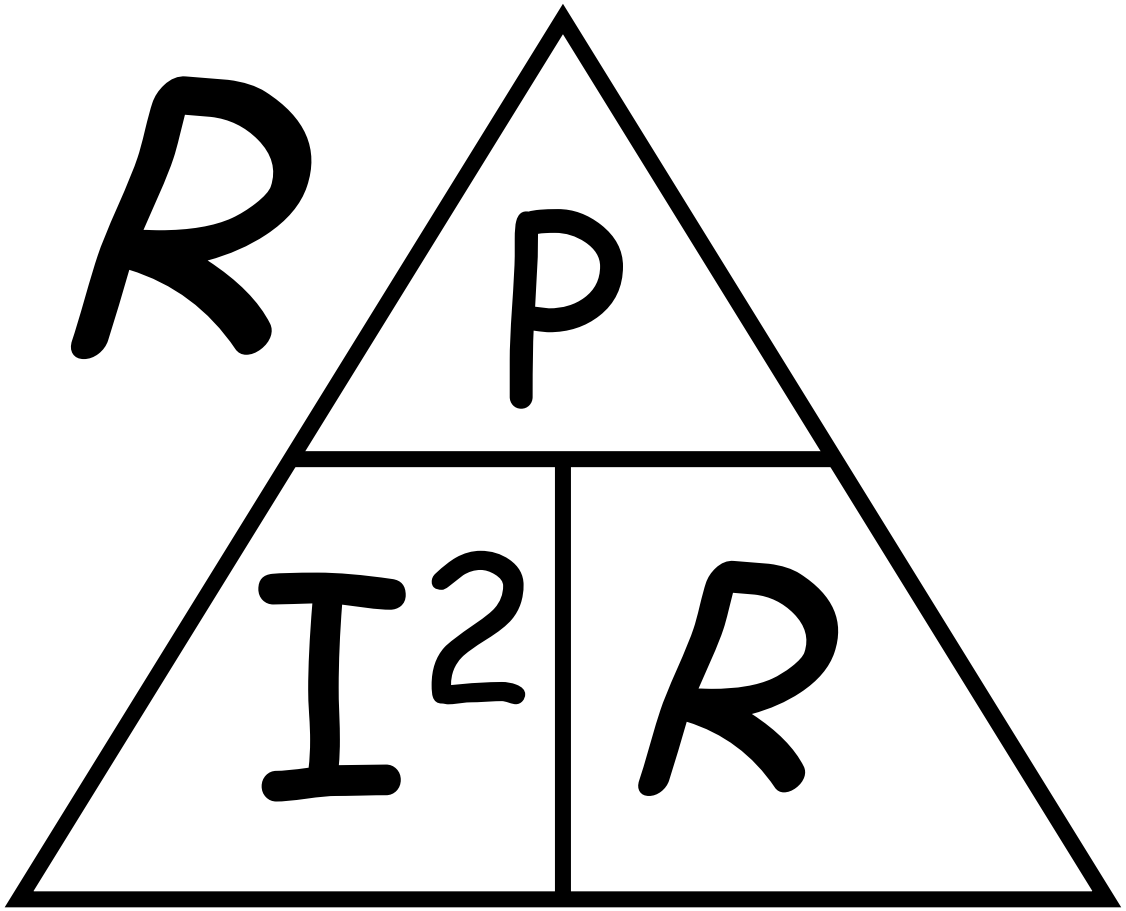
Electrical power (W) = current (A) x potential difference (V)

$$P = I \times V$$



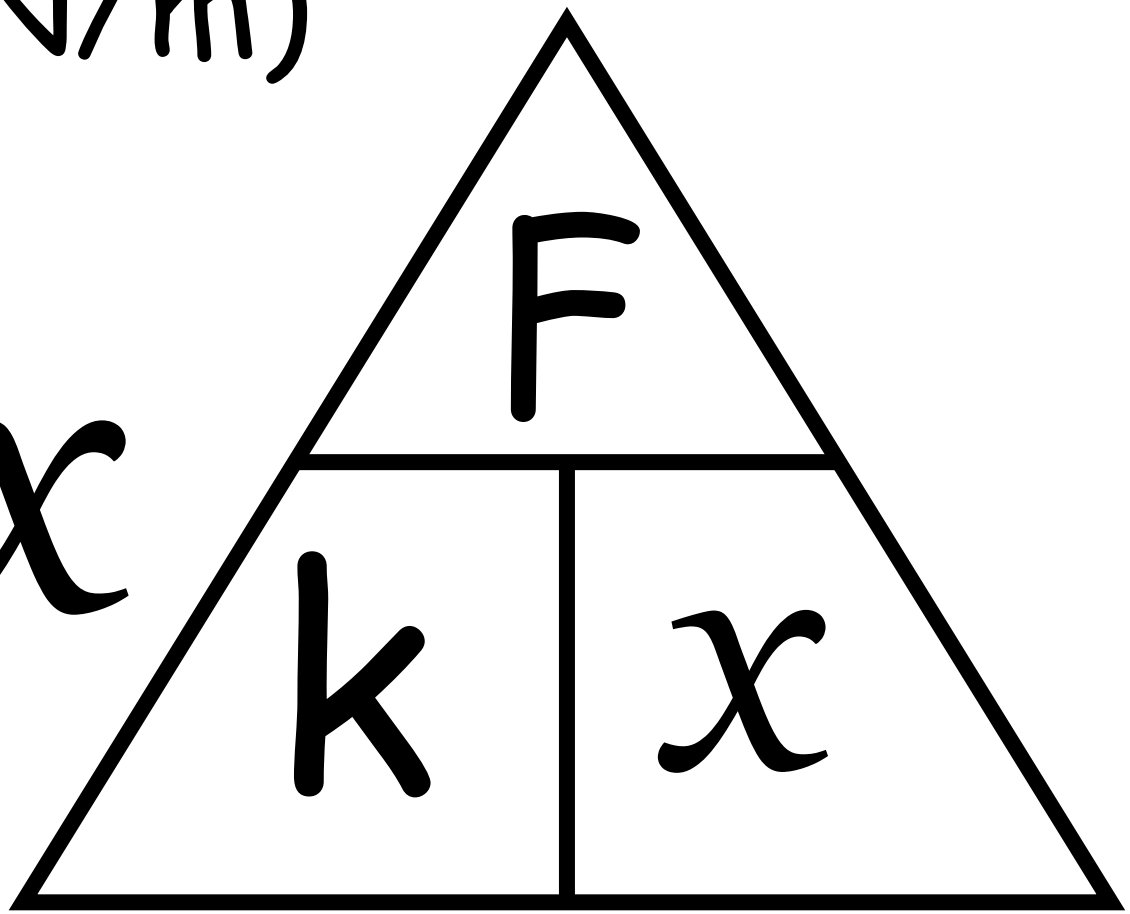
Electrical power (W) = current squared (A^2) x resistance (Ω)

$$P = I^2 \times R$$



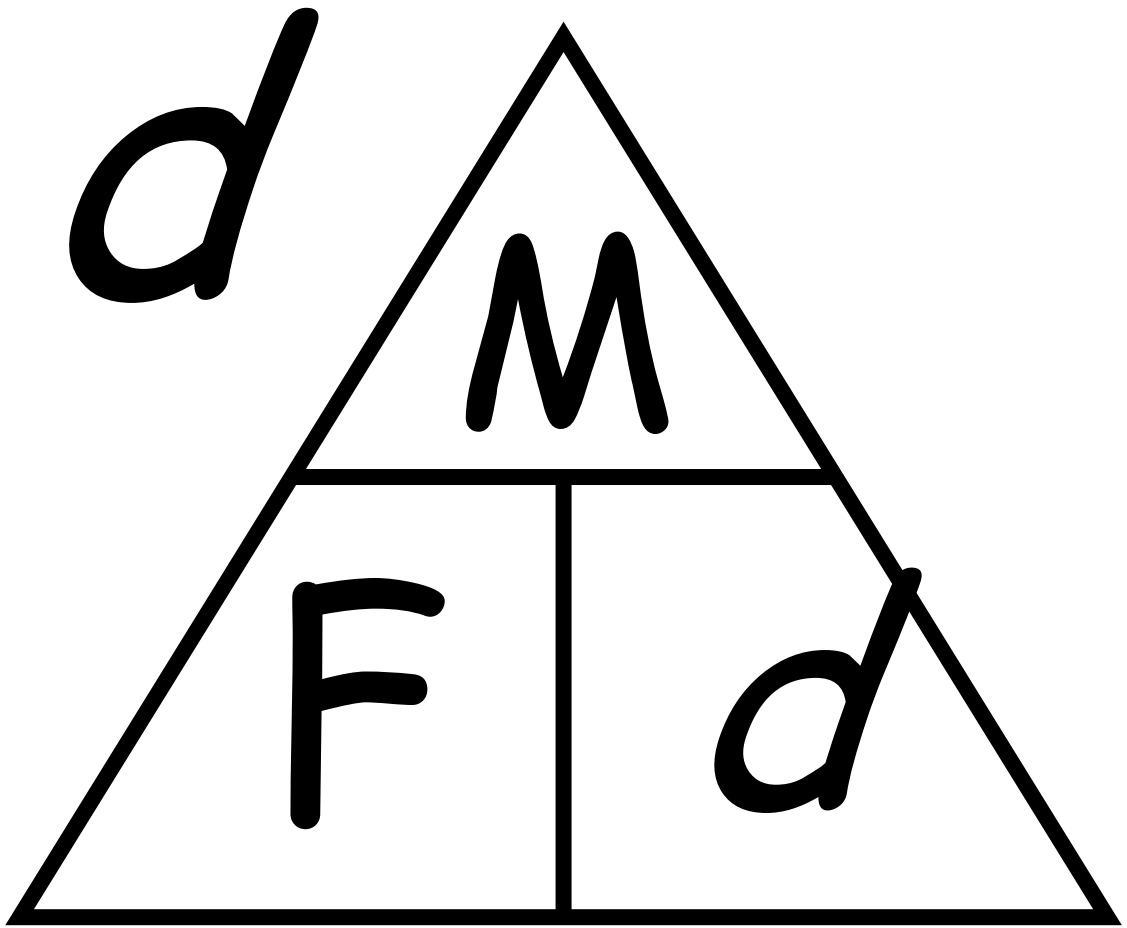
Force exerted on a spring (N) = spring constant (N/m) x extension (m)

$$F = k \times x$$



Moment of a force (Nm) = force x (N) distance normal to direction of force (m)

$$M = F \times d$$

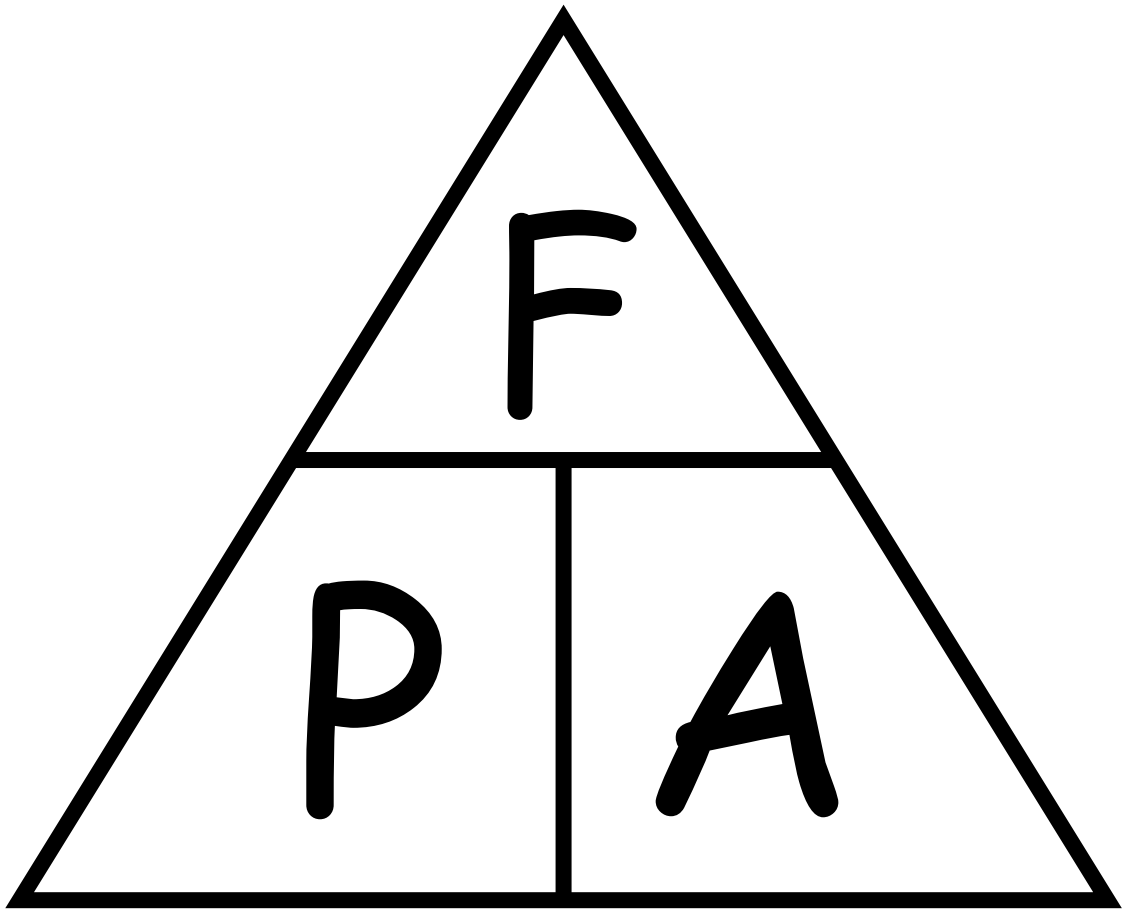


Triple Science Only

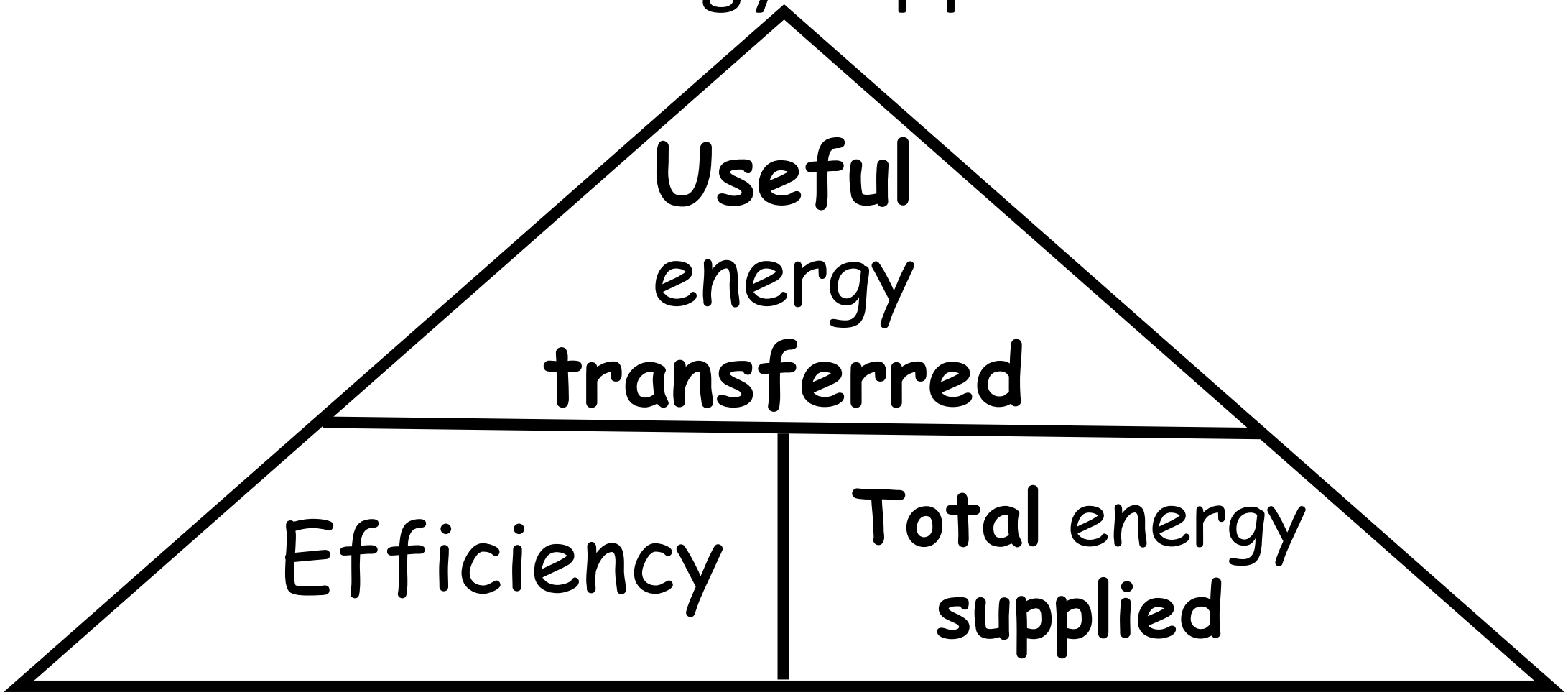
Pressure (N/m^2) = $\frac{\text{force normal to surface (N)}}{\text{area of that surface } (m^2)}$

$$P = \frac{F}{A}$$

Triple Science Only



$$\text{Efficiency} = \frac{\text{useful energy transferred by device}}{\text{total energy supplied to device}}$$



- Printed up to here