Essential Physics Formulas

Faraday's Law of Electromagnetic Induction:

$$\mathcal{E} = -N\frac{\mathrm{d}\Phi_B}{\mathrm{d}t}$$

Kinetic Energy:

$$E_t = \frac{1}{2}mv^2$$

Wattage:

$$W = VA$$

Acceleration:

$$\boldsymbol{a} = \frac{d\boldsymbol{v}}{dt}.$$

Mass-Energy Equivalence:

$$E = mc^2$$

Force:

$$F = ma$$

Gravity:

$$F = G\frac{m_1 m_2}{r^2},$$

Electric Charge:

$$Q = It$$

Ohm's Law:

$$V = IR$$

Velocity:

$$\overline{v} = \frac{\Delta s}{\Delta t}$$

Density:

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

Impulse:

$$\Delta p = F\Delta t$$

Δp = Change in momentum

F = applied force

Δt = elapsed time

Motion:

1. $v = v_0 + at$
2. $\Delta x = (\frac{v + v_0}{2})t$
3. $\Delta x = v_0 t + \frac{1}{2}at^2$
4. $v^2 = v_0^2 + 2a\Delta x$

Torque:

$$\tau = rF\sin\theta$$

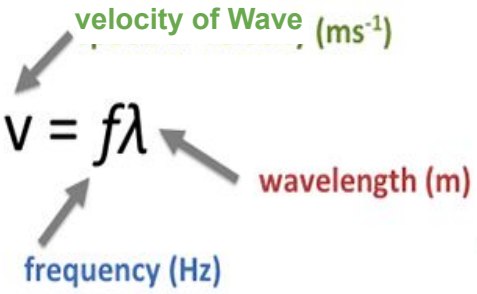
τ = torque

r = radius

F = force

θ = angle between F and the lever arm

Wave Equation:



FORMULA FOR POWER:

$$\text{POWER (In Watts)} = \frac{\text{WORK (In Joules)}}{\text{TIME (In Seconds)}}$$

Defining The Variables:

(WATTS = AMPERES X VOLTS)

WORK (Joules) = FORCE (In Newtons) X DISTANCE (In Meters)

ENERGY = POWER X TIME