

Motion

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

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

$$\text{Acceleration} = \frac{\text{Change in velocity}}{\text{Time}} = \frac{v - u}{t}$$

Mass and Weight

$$W = mg$$

Density

$$\text{Density} = \frac{\text{Mass}}{\text{Volume}}$$

Hooke's Law

$$F = kx$$

Force

$$F = ma$$

Moment

$$\text{Moment} = \text{Force} \times \text{Perpendicular Distance}$$

Momentum

$$\text{Momentum} = \text{Mass} \times \text{Velocity}$$

$$\text{Impulse} = Ft = mv - mu$$

$$\text{Impulsive force} = \frac{\text{Impulse}}{\text{Time}} = \frac{mv - mu}{t}$$

Energy

$$\text{Kinetic energy} = \frac{1}{2} mv^2$$

$$\text{Gravitational potential energy} = mgh$$

Work

$$\text{Work} = \text{Force} \times \text{Displacement}$$

Power

$$\text{Power} = \frac{\text{Energy}}{\text{Time}} = \frac{\text{Work}}{\text{Time}}$$

Efficiency

$$\text{Efficiency} = \frac{\text{Useful Energy Output}}{\text{Energy Input}} \times 100\%$$

$$\text{Efficiency} = \frac{\text{Useful Power Output}}{\text{Power Input}} \times 100\%$$

Pressure

$$\text{Pressure} = \frac{\text{Force}}{\text{Area}}$$

Static Liquid Pressure

$$P = h\rho g$$

Specific Heat Capacity

$$Q = mc\theta$$

Specific Latent Heat

$$Q = ml$$

Waves

$$v = f\lambda$$

Light

$$n = \frac{\text{speed of light in air}}{\text{speed of light in medium}}$$

$$n = \frac{\sin i}{\sin r}$$

$$n = \frac{1}{\sin c}$$

Current

$$I = \frac{Q}{t}$$

Potential Difference

$$V = \frac{E}{Q}$$

Ohm's Law

$$V = IR$$

Electrical Energy and**Power**

$$P = IV$$

$$E = IVt$$

Transformers

$$\frac{V_p}{V_s} = \frac{N_p}{N_s}$$

$$I_p V_p = I_s V_s$$