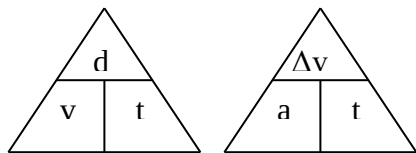


Kinematics

$$\Delta v = v_2 - v_1$$

$$d = v_1 t + \frac{1}{2} a t^2$$

$$d = v_2 t - \frac{1}{2} a t^2$$

$$v_2^2 = v_1^2 + 2ad$$

$$v_{AB} = v_{AX} + v_{XB}$$

$$v_{AB} = -v_{BA}$$

Trigonometry

$$c^2 = a^2 + b^2$$

$$\sin \theta = \frac{O}{H}$$

$$\cos \theta = \frac{A}{H}$$

$$\tan \theta = \frac{O}{A}$$

$$\frac{\sin A}{a} = \frac{\sin B}{b}$$

$$c^2 = a^2 + b^2 - 2ab \cos C$$

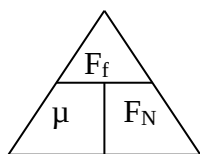
Dynamics (Forces)

$$F_{NET} = ma$$

$$F_g = mg$$

$$a_g = g = 9.81 \text{ m/s}^2$$

$$F_{NET} = \Sigma F$$



$$W = Fd$$

$$E_g = mgh$$

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

$$E_{TH} = F_f d$$

$$E_T = \Sigma E$$

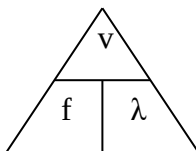
$$P = \frac{E}{t}$$

Vibrations, Waves, and Sound

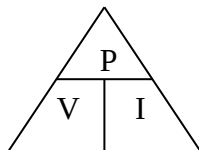
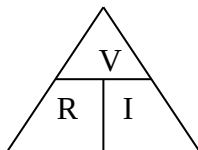
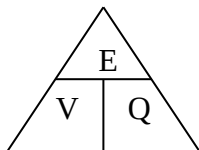
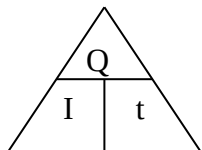
$$T = \frac{t}{\#}$$

$$f = \frac{\#}{t}$$

$$T = \frac{1}{f}$$



$$v_{AIR} = 332 + 0.59T$$

Electricity and Magnetism

$$R_T = R_1 + R_2 + R_3 \dots$$

$$\frac{N_1}{N_2} = \frac{V_1}{V_2} = \frac{I_2}{I_1}$$

$$\frac{1}{R_T} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} \dots$$