$$T = \frac{2\pi R}{v}$$

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

$$PE = mgh$$

$$W = (F\cos\theta)s$$

$$\omega = \frac{2\pi}{T} = 2\pi f; \quad f = \frac{1}{T}$$

$$\omega = \sqrt{\frac{k}{m}}$$

$$PE_{el} = \frac{1}{2}kx^2$$

$$W_{nc} = E_f - E_i$$

$$E = KE + PE$$

$$\vec{p} = m\vec{v}$$

$$\vec{p}_i = \vec{p}_f$$

$$s = r\theta$$

$$\overline{\omega} = \frac{\Delta\theta}{\Delta t}$$

$$\overline{\alpha} = \frac{\Delta\omega}{\Delta t}$$

$$\omega = \omega_0 + \alpha t$$

$$\theta = \theta_0 + \omega_0 t + \frac{1}{2}\alpha t^2$$

$$\omega^2 = \omega_0^2 + 2\alpha\Delta\theta$$

$$v_t = \omega r$$

$$a_t = \alpha r$$

$$a_r = \frac{v^2}{r} = \omega^2 r$$

$$T = \frac{2\pi}{\omega}$$

$$KE = \frac{1}{2}I\omega^2$$

$$\tau = Fl$$

$$\tau_{net} = I\alpha$$

$$KE = \frac{1}{2}I_{CM}\omega^2 + \frac{1}{2}mv_{CM}^2$$

$$L = I\omega$$

$$W_R = \tau\theta$$

$$F_{el} = -kx$$

$$x = A\cos\omega t$$

$$v = -\omega A\sin\omega t$$

$$a = -\omega^2 A\cos\omega t$$

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

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

$$P_2 = P_1 + \rho gh$$

$$F_B = W_{\textit{fluid displaced}}$$

$$\rho Av = \text{const}$$

$$\mathrm{P} + \frac{1}{2}\rho v^2 + \rho gy = \text{const}$$

$$\mathrm{T} = \mathrm{T_C} + 273.15$$

$$\Delta L = \alpha L_0 \Delta T$$

$$\Delta V = \beta V_0 \Delta T$$

$$\omega = \sqrt{\frac{mgL}{I}}$$

$$\omega = \sqrt{\frac{g}{L}}$$

$$F = Y\left(\frac{\Delta L}{L_0}\right)A$$

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

$$\Delta P = -B\left(\frac{\Delta V}{V_0}\right)$$

.....other.....

$$f = \mu F_N$$

$$Ax + Bx^2 + C = 0$$

$$x = \frac{-B \pm \sqrt{B^2 - 4AC}}{2A}$$

$$I_{sphere_{CM}} = \frac{2}{5}mr^2$$

$$I_{hoop_{CM}} = mr^2$$

$$I_{disk_{CM}} = \frac{1}{2}mr^2$$

$$I_{rod_{CM}} = \frac{1}{12}mr^2$$

.....constants.....

$$g = 9.8\,\mathrm{m/s^2}$$