

PHYS 1101**Information Sheet**

$$\rho = m/V$$

$$V_c = \pi R^2 L$$

$$V_b = LWH$$

$$V_s = (4/3)\pi R^3$$

$$A_x = A \cos \theta$$

$$A_y = A \sin \theta$$

$$\theta = \tan^{-1} \left(\frac{A_y}{A_x} \right)$$

$$A = \sqrt{A_x^2 + A_y^2}$$

$$a_c = v^2/r$$

$$\Sigma \mathbf{F} = m\mathbf{a}$$

$$\Sigma \mathbf{F} = 0$$

$$\Sigma \tau = 0$$

$$\tau = Fs \sin \theta$$

$$\Sigma \tau = I\alpha$$

$$F = k \Delta y$$

$$T = 2\pi \sqrt{\frac{m}{k}}$$

$$W = Fd \cos \theta$$

$$W_{total} = \Delta KE = \frac{1}{2}mv_f^2 - \frac{1}{2}mv_i^2$$

$$\Delta U = mg \Delta y$$

$$\Delta KE = -\Delta U + W_f$$

$$E = KE + U$$

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

$$mgh = \frac{1}{2}mv^2 + \frac{1}{2}I\omega^2$$

$$I = mr^2 \left(\frac{g}{a} - 1 \right)$$

$$T = 2\pi \sqrt{\frac{l}{g}}$$

$$\langle \omega \rangle = \Delta \theta / \Delta t$$

$$\langle \alpha \rangle = \Delta \omega / \Delta t$$

$$h = r\theta$$

$$v = r\omega$$

$$a = r\alpha$$

$$f = \mu N$$

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

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

$$v = \lambda f$$

$$L = n\lambda/2$$

$$v^2 = v_o^2 + 2a \Delta x$$

$$v = v_o + at$$

$$x = x_o + v_o t + \frac{1}{2}at^2$$

$$v = \sqrt{\frac{T}{d_l}}$$

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

$$\log(xy) = \log x + \log y$$

$$\log(x^n) = n \log x$$