

DO NOT WRITE ON THIS SHEET

Physics SN1 Equation Sheet

$$\bar{v} = \frac{\Delta x}{\Delta t}$$

$$\Sigma \vec{F} = \vec{F}_{net} = m\vec{a}$$

$$K_{trans} = \frac{1}{2}mv^2$$

$$\bar{a} = \frac{\Delta v}{\Delta t}$$

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

$$K_{rot} = \frac{1}{2}I\omega^2$$

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

$$\vec{F}_{elastic} = -k\vec{x}$$

$$U_{grav} = mgh$$

$$v = v_o + at$$

$$f_k = \mu_k n$$

$$U_{elastic} = \frac{1}{2}kx^2$$

$$v^2 = v_o^2 + 2a(x - x_o)$$

$$f_s \leq \mu_s n$$

$$K_1 + U_1 + W_{nc} = K_2 + U_2$$

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

$$\vec{\tau} = \vec{r} \times \vec{F}$$

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

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

$$\Sigma \vec{\tau} = \vec{\tau}_{net} = I\vec{\alpha}$$

$$\vec{J} = \vec{F}\Delta t$$

$$s = r\theta$$

$$I = \sum_j m_j r_j^2$$

$$\vec{J}_{net} = \Delta \vec{p}$$

$$v_t = r\omega$$

$$\vec{r}_{CM} = \frac{\sum_j m_j \vec{r}_j}{M}$$

$$\vec{L} = I\vec{\omega}$$

$$a_t = r\alpha$$

$$W = \vec{F} \cdot \vec{d}$$

$$a_c = \frac{v_t^2}{r} = \omega^2 r$$

$$W_{net} = \Delta K$$

$$G = 6.67 \times 10^{-11} \frac{\text{N} \cdot \text{m}^2}{\text{kg}^2}$$

$$\theta = \theta_o + \omega_o t + \frac{1}{2}\alpha t^2$$

$$P = \frac{W}{t} = \vec{F} \cdot \vec{v}$$

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

$$\omega = \omega_o + \alpha t$$

$$\omega^2 = \omega_o^2 + 2\alpha(\theta - \theta_o)$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$