Physics 30S — Formula Sheet

$$m = \frac{y_2 - y_1}{x_2 - x_1} \qquad a^2 + b^2 = c^2 \qquad x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$\sin\theta = \frac{o}{h} \qquad\qquad \cos\theta = \frac{a}{h} \qquad\qquad \tan\theta = \frac{o}{a}$$

$$\overrightarrow{\Delta d} = \overrightarrow{d_f} - \overrightarrow{d_i} \qquad \overline{v} = \frac{\overrightarrow{\Delta d}}{\Delta t} \qquad \vec{a} = \frac{\overrightarrow{\Delta v}}{\Delta t}$$

$$\overline{v} = \frac{\overrightarrow{v_f} + \overrightarrow{v_i}}{2} \qquad \overrightarrow{v_f} = \overrightarrow{v_i} + \vec{a}t \qquad \vec{d} = \left(\frac{\overrightarrow{v_f} + \overrightarrow{v_i}}{2}\right) \cdot t$$

$$\vec{d} = \overrightarrow{v_i}t + \frac{1}{2}\vec{a}t^2 \qquad \overrightarrow{v_f}^2 = \overrightarrow{v_i}^2 + 2\vec{a}d$$

$$\sum \overrightarrow{F} = m\vec{a} \qquad \overrightarrow{F_g} = m\vec{g} \qquad F_f = \mu \cdot F_N$$

$$q = N \cdot e \qquad\qquad \overrightarrow{E} = \frac{\overrightarrow{F_E}}{q}$$

$$F = BIL\sin\theta$$

$$f = \frac{1}{T} \qquad v = f\lambda$$

$$\frac{v_1}{v_2} = \frac{\lambda_1}{\lambda_2} = \frac{\sin\theta_1}{\sin\theta_2} \qquad |P_nS_1 - P_nS_2| = \left(n - \frac{1}{2}\right)\lambda$$

$$v = 331 + 0.6T$$

$$L_n = (2n-1)\frac{\lambda}{4} \qquad\qquad L_n = \frac{n\lambda}{2}$$

$$\lambda = \frac{\Delta x \cdot d}{L} \qquad n_1\sin\theta_1 = n_2\sin\theta_2 \qquad n = \frac{c}{v}$$