

Physics 11 – Exam Equations

$$x = x_o + \bar{v}t$$

$$v = v_o + at$$

$$y = y_o + v_o t + \frac{1}{2} at^2$$

$$\bar{v} = \frac{v + v_o}{2}$$

$$F_{\text{net}} = ma$$

$$F_g = mg$$

$$J = mv - mv_o$$

$$J = Ft$$

$$m_a v_a + m_b v_b = (m_a + m_b) v'$$

$$W = E_f - E_i$$

$$E_k + E_g + E_e = E_k' + E_g' + E_e'$$

$$E_e = \frac{1}{2} kx^2$$

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

$$v = f\lambda$$

$$f' = f \left(\frac{v + v_o}{v - v_s} \right)$$

$$L_n = (2n - 1) \lambda / 4$$

$$f_{\text{beat}} = |f_2 - f_1|$$

$$T = t/N$$

$$\text{Eff} = E_o/E_i \times 100\%$$

$$\frac{1}{d_i} + \frac{1}{d_o} = \frac{1}{f}$$

$$M = \frac{h_i}{h_o} = -\frac{d_i}{d_o}$$

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

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

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

$$v^2 = v_o^2 + 2a(y - y_o)$$

$$F_f = \mu F_N$$

$$p = mv$$

$$m_a v_a + m_b v_b = m_a v_a' + m_b v_b'$$

$$(m_a + m_b) v = m_a v_a' + m_b v_b'$$

$$W = Fd$$

$$P = W/t$$

$$F = kx$$

$$E_g = mgh$$

$$v = 331 + 0.6T$$

$$f' = f \left(\frac{v - v_o}{v + v_s} \right)$$

$$L_n = n\lambda/2$$

$$f = N/t$$

$$T = 1/f$$

$$\text{Eff} = W_o/W_I \times 100\%$$

$$n_i \sin \theta_i = n_R \sin \theta_R$$

$$1 \text{ hp} = 746 \text{ W}$$