

Physics 2305
Equation Sheet for Exam 1

11 February, 2000

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

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

$$v = v_o + a t$$

$$v = v_o - g t$$

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

$$v^2 = v_o^2 - 2 g (y - y_o)$$

$$R = (v_o^2 / g) \sin 2\theta_o$$

$$a = v^2 / r$$

$$T = 2 \pi r / v$$

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

$$W = m g$$

$$f = \mu N$$

Quadratic formula: $x(y=0) = (-b/2a) \pm (b^2 - 4ac)^{1/2} / (2a)$

$$\mathbf{a} \cdot \mathbf{b} = ab \cos \theta = a_x b_x + a_y b_y + a_z b_z$$

$$|\mathbf{a} \times \mathbf{b}| = ab \sin \theta$$

$$\sin^2 \theta + \cos^2 \theta = 1$$

$$\sin(\alpha \pm \beta) = \sin \alpha \cos \beta \pm \cos \alpha \sin \beta$$

$$\sin 2\theta = 2 \sin \theta \cos \theta$$

$$g = 9.80 \text{ m/s}^2$$

$$1 \text{ inch} = 2.54 \text{ cm}$$

$$1 \text{ pound} = 0.225 \text{ N}$$