Name: Date: Period:

Equation Sheet - Fall Final Exam

Science & Measurement

$$\%\text{ error} = \frac{|\text{measured} - \text{expected}|}{\text{expected}} \times 100$$

Metric Prefixes		
k	kilo-	10^3
–	(*base*)	10^0
c	centi-	10^{-2}
m	milli-	10^{-3}
µ	micro-	10^{-6}
n	nano-	10^{-9}

Motion & Kinematics

Constant Velocity & Acceleration

$$v = \frac{d}{t} \qquad a = \frac{\Delta v}{t} \qquad \Delta v = v_f - v_i$$

Constant Acceleration

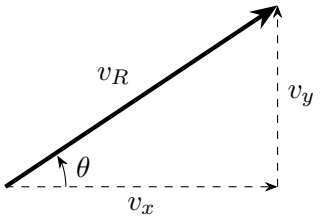
$$v_f = v_i + at \qquad d = v_i t + \frac{1}{2}at^2 \qquad v_f^2 = v_i^2 + 2ad$$

"Old Faithful" *"The Big Chalupa"* *"Ain't Got No Time"*

Vector Equations

$$\theta = \tan^{-1}(v_y/v_x) \qquad v_x^2 + v_y^2 = v_R^2$$

$$v_x = v_R\cos(\theta) \qquad v_y = v_R\sin(\theta)$$



Forces

$$F_{NET} = ma \qquad F_{NET} = \pm F_1 \pm F_2 \pm \cdots \qquad F_G = mg \qquad g = 9.8\,\text{m/s}^2$$

Circular Motion & Gravity

$$T = \frac{t}{\#\text{rot}} \qquad v_T = \frac{2\pi r}{T} \qquad v_T = r\omega \qquad \omega = \frac{\#\text{rot}}{t} \times 2\pi \qquad F_C = \frac{mv_T^2}{r}$$

$$F_G = \frac{Gm_1m_2}{d^2} \qquad G = 6.67 \times 10^{-11}\,\text{Nm}^2/\text{kg}^2$$