

Name:

Date:

Period:

Honors Physics Equation Sheet (Fall Final Exam)

Basic Kinematics

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

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

$$\bar{v} = \frac{v + v_0}{2}$$

Kinematic Equations

$$v = v_0 + at$$

“Old Faithful”

$$x = x_0 + v_0 t + \frac{1}{2}at^2$$

“Big Chalupa”

$$v^2 = v_0^2 + 2a(x - x_0)$$

“Ain’t Got No Time”

Range Equation

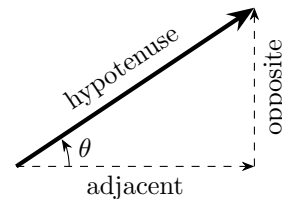
$$R = \frac{v_0^2 \sin(2\theta)}{g}$$

Vectors & Trig

$$\sin \theta = \frac{\text{opp}}{\text{hyp}}$$

$$\cos \theta = \frac{\text{adj}}{\text{hyp}}$$

$$\tan \theta = \frac{\text{opp}}{\text{adj}}$$



Forces

$$\Sigma F = ma$$

$$F_G = mg$$

$$F_{f,s} = \mu_s F_N$$

$$F_{f,k} = \mu_k F_N$$

Circular Motion & Gravitation

$$\Sigma F_C = ma_C = \frac{mv^2}{r}$$

$$a_C = \frac{v^2}{r}$$

$$F_G = \frac{Gm_1m_2}{r^2}$$

$$G = 6.67 \times 10^{-11} \text{ Nm}^2/\text{kg}^2$$

Work & Energy

$$W = F_{\parallel} d$$

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

$$PE_g = mgy$$

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

$$W = \Delta KE$$

$$\Sigma E_0 + W_{NC} = \Sigma E$$

$$P = \frac{W}{t}$$