­

## Physics Equation Sheet

Kinematics

vf = vi + at

Δx = vit + ½ at2

vf2 = vi2 + 2aΔx

Δx = ½ (vi+vf)t

Constant velocity:

xf = xi + vt

Δx = vavgt

Forces ΣF = ma

Fg= mg Fk= μk Fn

Fspring = kx Fs= μs Fn

Inclined Plane:

Fg **||** = mg sin θ Fg  = mg cos θ

Vector Components θ

vx = v cos θ vy = v sin θ

Momentum

p = mv Ft = Δp

pi + Δp = pf

m1v1*i* + m2v2*i* = m1v1*f* + m2v2*f*

Electricity

V = IR

Work, Energy and Power

KE = ½ mv2

PEg = mgh

PEe = ½ kx2

W = Fdcosθ

P = W/t

Circular Motion and Gravitation









Waves

Constants

G = 6.67 x 10 -11 N m2/kg2

rE = 6.36 x 106 m (Earth’s radius)

mE = 5.98 x 1024 kg (Earth’s mass)

k = 8.99 x 109 N m2/C2

qe = -1.6 x 10-19 C

me = 9.11 x 10-31 kg

mp = 1.67 x 10-27 kg

c = 3.0 x 108 m/s

g = 10 m/s2  (9.8 m/s2 for gravitation unit)