Equations for Physics

**elastic potential energy**

**kinetic energy gravitational potential energy of a spring**

  

**mechanical energy work by a force work by friction work by gravity**

   

**power when a force moves an object**

**work on system power at constant speed in a straight line**

  

**Newton’s Second Law force of friction force of a spring weight on earth**

    

**momentum impulse**

    

**equations of accelerated motion**

   

  

**definition of NET force definition of work on an object**

** **works by forces = *ΔKE* of the object

**centripetal acceleration centripetal force**

  

**Newton’s law of gravitation acceleration due to gravity**

 

Physical Constants

acceleration due to gravity: *g* = 9.8 m/s2

gravitational constant: *G* = 6.67 X 10 -11 

**general waves**

**light waves**

**index of refraction Snell’s law critical angle**

**index of refraction and wavelength**

**mirrors & lenses**

OR = *magnification*

**electric circuits**

**Ohm’s law resistors in series**

**electrical power resistors in parallel**

**electric fields**

**Coulomb’s law electric field strength**

OR OR

**charged particle moving in an electric field**

OR AND

**physical constants**

**speed of light in vacuum or air: *c* = 3 X 108 m/s**

**index of refraction of vacuum or air: *n* = 1**

**fundamental electric charge: *e* = 1.6 X 10 -19 C**

**Coulomb’s law constant:**