Formula Sheet

Density

$Density = \frac{mass}{volume}$ $1\ gram\ H_2O = 1\ ml\ H_2O$ $Density\ of\ H_2O = 1\ g/ml$

Motion

$speed = \frac{distance}{time}$ $v = \frac{d}{t}$ $velocity = \frac{displacement}{time}$ $acceleration = \frac{change\ in\ velocity}{time} = \frac{(v_f - v_i)}{t}$

Forces

g=9.8 m/s^2

$Force = mass \cdot acceleration$ $F = ma$ $Weight = mass \cdot gravity$ $W = mg$

$momentum = mass \cdot velocity$ $p = mv$

Work, Power, Energy

$Work = force \cdot distance$ $w = F \cdot d$ $Power = \frac{work}{time}$ $P = \frac{w}{t}$

$GPE = mass \cdot acceleration\ of\ gravity \cdot height$ $GPE = mgh$

$KE = \frac{1}{2}\ mass \cdot velocity^2$ $KE = \frac{1}{2}mv^2$ $Horsepower = \frac{power}{746}$

Waves

$Period = \frac{1}{frequency}$ $frequency = \frac{1}{period}$ $Wave\ speed = wavelength \cdot frequency$ $v = \lambda f$

$Light\ speed = wavelength \cdot frequency$ $c = \lambda f$ $c = 300{,}000{,}000\ m/s$

Metric Conversion

King	Henry	Died	Unusually	Drinking	Chocolate	Milk
Kilo	Hecto	Deca	* Unit *	Deci	Centi	Milli
10 x 10 x 10 x LARGER than a unit	10 x 10 x LARGER than a unit	10 x LARGER than a unit	***Meter*** *(length)* ***Liter*** *(liquid volume)* ***Gram*** *(mass/weight)*	10 x SMALLER than a unit	10 x 10 x SMALLER than a unit	10 x 10 x 10 x SMALLER than a unit
1 kilo = 1,000 units	1 hecto = 100 units	1 deca = 10 units	**1 unit**	10 deci = 1 unit	100 centi = 1 unit	1,000 milli = 1 unit
km = kilometer kL = kiloliter kg = kilogram	hm = hectometer hL = hectoliter hg = hectogram	dam = decameter daL = decaliter dag = decagram	m = meter L = liter g = gram	dm = decimeter dL = deciliter dg = decigram	cm = centimeter cL = centiliter cg = centigram	mm = millimeter mL = milliliter mg = milligram
Example: 5 kilo	50 hecto	500 deca	5,000 units	50,000 deci	500,000 centi	5,000,000 milli

DIVIDE numbers by 10 if you are getting bigger (same as moving decimal point one space to the left)

MULTIPLY numbers by 10 if you are getting smaller (same as moving decimal point one space to the right)

Electricity

$Voltage = Current \cdot Resistance$

$V = IR$