H159 Constants & Basic Formulae

k = kilo = 10^3	$c = 3 \times 10^8$ m/s	1 ly = 9.5×10^{12} km
M = mega = 10^6	$h = 6.63 \times 10^{-34}$ Js	$G = 6.67 \times 10^{-11}$ $m^3kg^{-1}s^{-2}$
n = nano = 10^{-9}	$\sigma = 5.65 \times 10^{-34}$ $W/m^2/K^4$)	$k = 1.38 \times 10^{-23}$ J/K
m = milli = 10^{-3}	1 AU = 1.5×10^7 km	

$\alpha = \frac{s}{d}57.3°$	$p^2 = a^3$	$v = \frac{\Delta x}{\Delta t}$	$a = \frac{\Delta v}{\Delta t}$	$net\ F = ma$	$p = mv$	$L = mvr$	$KE = \frac{1}{2}mv^2$
small angle formulae	*Kepler's 3rd law*	*velocity*	*acceler-ation*	*Newton's 2nd law*	*momentum*	*angular momentum*	*kinetic energy*

$E = mc^2$	$F = G\frac{M_1M_2}{d^2}$	$a^3 = \frac{G}{4\pi^2}(M_1 + M_2)p^2$	$a^3 = (M_1 + M_2)p^2$	$v_{orbit} = \sqrt{\frac{GM}{R}}$	$v_{escape} = \sqrt{\frac{2GM}{R}}$
mass energy	*gravity*	*Newton's form Kepler's 3rd*	*Stellar Astronomer's form*	*orbital velocity*	*escape velocity*

$PV = NkT$	$D = \frac{m}{V}$	$c = \lambda f$	$E = hf = \frac{hc}{\lambda}$
ideal gas law	*density*	*wave equation*	*photon energy*