Writing Assignment

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1 Everything that I need for my final:

$F = ma$

$F(g) = \frac{m*M*g}{r^2}$

$A(sphere) = 4r^2\pi$

$V(sphere) = \frac{4}{3}8r^3\pi$

Newton's second law $\Rightarrow F = ma$.

$KE = \frac{m*M*g}{2r}$

$PE = mgh$

$E = \frac{PE}{2} = -KE$

$PE = -2KE$ only for circular orbits

If $E \geq 0$ it will not return

$V(escape) = \sqrt{\frac{2*M*g}{r}}$

$F(e) = \frac{k(c)*q*q(2)}{r^2}$

$E = \frac{q}{4E(0)r^2\pi} \Rightarrow$ Coulombs Law

Density=$\frac{charge}{volume}$ $p = \frac{q}{V}$

$F = qE \Rightarrow$ Force of the electron (ALWAYS true)

$w = \frac{\Delta\theta}{\Delta t}$

$V = wr$

$KE + PE = 0$

$E = -\frac{\Delta V}{\Delta x}$

$PE = qV$

$F = -\frac{\delta PE}{\Delta x}$

$I = \frac{\Delta q}{\Delta t}$

Ampere=$\frac{Coulomb}{sec}$

$R = \frac{\Delta V}{I}$

$\frac{1}{R(total)} = \frac{1}{R(1)} + \frac{1}{R(2)} \Rightarrow$ Parallel Resistors

$R(total) = R(1) + R(2) \Rightarrow$ Linear Resistors

Power=$\frac{\Delta Energy}{\Delta Time}$

$P = IV$

* Voltage is in the resistor, BUT Voltage drop is in the capacitor.

* Right hand Rule: Field = Iron man; Current = Grabbing the rope.

$R = \frac{mv}{qB}$

* Current go in the direction of e^+.

* If current in a R(resistor)C(capacitor) Cercet goes to the right $\Rightarrow$ electrons to the left.

$F(b) = qvB * sin\theta$

$EA = \frac{q(enc)}{E(0)}$ $\Rightarrow$ Gauss's Law

* Charging $\Rightarrow$ Q=0; Discharging $\Rightarrow$ Q=max

(Torque) $J = rF * sin\theta$

$J \uparrow - J \downarrow = 0$

* F(net)=0 $\Rightarrow$ Pure Torque / Couple

$l = rp * sin\theta$

*There is NO zero angular momentum

l=nh; where $h = 1.05 * 10^-34$ $\frac{kg*m^2}{s}$ $\Rightarrow$ the lowest

$KE = \frac{1}{2} * Iw^2$

$F(particleonthewall) = \frac{2*mVs}{\Delta t}$

$Pressure = \frac{F(wall)}{A}$

* Ideal Gases - Monotonic, like He - Non-interecating - no forces between particles: $KE = \frac{3}{2} * K(b)T$. However, Diatonic: $KE = \frac{5}{2} * K(b)T$.

* Theory: $PV = \frac{Nmv^2}{3}$; Experiment: $PV = NB(b)T$

$U(energy) = m * C(shc) * \Delta T$ $\Rightarrow$ true for any matirials

$W = P * A * \Delta x$

* Heat Circle:

$W = P * \Delta V$

1. Isobaric Expansion - constant pressure and increasing volume; add heat

2. Isovolumetric cooling - decreasing pressure and constant value; release heat

3. Isobaric compressure - constant pressure and decreasing volume; release heat

4. Isovolumetric heating - increasing pressure and constant volume; add heat