The Ordainments of All The Physical Rules / Formulas is Allah's

Some Motion Formulas:

The notations were shown in [] and in accordance with the SI system.

$\vec{v}=\frac{\Delta \vec{x}}{t}$ [m/s] $\vec{a}=\frac{\Delta \vec{v}}{t}$ [m/s²] $\vec{F}=m\vec{a}$ [N]

$\vec{G}=m\vec{g}$ $\vec{v}=\vec{a}\,t$ $\vec{v}=\vec{v}_0+\Delta\vec{v}$

In linear motion:

$x=x_0+v\,t+\frac{1}{2}at^2$ $\vec{v^2}=\vec{v_0^2}+2\vec{a}x$

In circular and periodic motions:

$f=\frac{1}{T}$ $v=\frac{2\Pi r}{T}$ $w=\frac{2\Pi}{T}$ $a=\frac{v^2}{r}=w^2 r$

Friction Force: $F_s=k\,N$ About the orbits:: $\frac{R^3}{T^2}=K$

About gravitation : $F=G\frac{M_1 M_2}{R^2}$

In the simple : $T=2\Pi\sqrt{\frac{l}{g}}$ Impulse: $\vec{F}\,t=itme$

Momentum: $\vec{P}=m\vec{v}$ Power: $P=\frac{W}{t}$ Work: $W=\vec{F}\,\vec{x}$

[Joule] Energy: $E=\frac{1}{2}m\,v^2$ [J] in ideal collision the momentum and the energy is provisioned / supposed to be preserved:

Kinetic Energy: $E_k=\frac{1}{2}I\,w^2$

Potencial Energy: $E_p=mgh$

$E_p=\frac{1}{2}k\,x^2\,(ideal\ yayda\ potansiyel\ enerji)$

Cisim / Satellite Potential Energy $E_{Pr}=-G\frac{mM}{r}$

*(r, distance from the center of the earth)

Electrical:

$\vec{E}=\frac{\vec{F}}{q}$ [N/C]

Force Due to electrical charges $\vec{F}=k\frac{q_1 q_2}{d^2}$ [N]

$E=k\frac{q}{d^2}$ $E=\frac{V}{d}$ Elektrical Potantial $V=k\frac{q}{d}$

Work: W= q V Capasitance $C=\frac{q}{V}$ [F]

Capacitance in a plane condansator $C=\varepsilon\frac{A}{d}$

Capacitance in serial connection

$\frac{1}{C_{eş}}=\frac{1}{C_1}+\frac{1}{C_2}+....+\frac{1}{C_n}$

Capacitance in parallel connection

$C_{eş}=C_1+C_2+....+C_n$ $W=\frac{1}{2}q\,V$ $W=\frac{1}{2}C\,V^2$

Current: $i=\frac{q}{t}$ [A] Resistance $R=\frac{V}{i}$ [Ω] $W=q\,V$

$W=i^2 R\,t$ $W=V\,i\,t$ $W=\frac{V^2}{R}t$

Power: $P=i^2 R=\frac{V^2}{R}$ [W] $\varepsilon=\frac{W}{q}$ $W=\varepsilon\,i\,t$

Serially connected Resistances $R_{eş}=R_1+R_2+....+R_n$

Paralell-connected resistances $\frac{1}{R_{eş}}=\frac{1}{R_1}+\frac{1}{R_2}+....+\frac{!}{R_n}$

$\Phi=B.S[Wb]$ $\varepsilon-i\,r=0$ $B=K\frac{2i}{d}$ [Tesla]

$B_{halka}=K\frac{2\Pi i}{r}$ $B_{simit}=K\frac{2\Pi i}{r}N$ $F=B\,i\,l$

$F=K\frac{2\,i_1\,i_2}{d}l$ $m\frac{v^2}{r}=B\,q\,V$ $\rightarrow r=\frac{m\,v}{B\,q}$ $F=Bqv$

$\varepsilon=\frac{\Delta\Phi}{\Delta t}(induction\ emf)$ $\varepsilon=-N\frac{\Delta\Phi}{\Delta t}(Selenoid\ N)$

$\varepsilon=-L\frac{\Delta i}{\Delta i}$ $V=V_m\sin 2\Pi\,f\,t$ $V_e=\frac{V_m}{\sqrt{2}}=0{,}707\,V_m$

*What Voltmeter or an ampermeter gauges is the effective.

$W=i_e^2 R\,t\,(ısıya\ dönüşen\ enerji)$ $P_e=i_e^2 R\,(etkin\ güç)$

$X_L=wL=2\Pi\,f\,l$ $X_c=\frac{1}{Cw}=\frac{1}{C2\Pi f}$

Empedance in RLC circuit $Z=\sqrt{R^2+(X_L-X_C)^2}$

In transformators $\frac{\varepsilon_s}{\varepsilon_p}=\frac{N_s}{N_p}$ $Effectivity=\frac{P_{seconder}}{P_{primer}}$

Optic:

$Illumination\ intensity[lx]=E=\frac{I}{d^2}=[cd/m^2]$

$\frac{\sin(i)}{\sin(r)}=n_{12}=\frac{n_2}{n_1}\rightarrow n_1\sin(i)=n_2\,sinr$

i:incoming angleı, r:reflection angle

Tam yansıma $n_2\,sini=n_2\sin 90$ In the finely circular mirror $f=\frac{R}{2}$

$Concave-Circular:\frac{1}{f}=\frac{1}{D_c}+\frac{1}{D_g}$ $f^2=S_g.S_c$

(Dv and Dc:The distance of the the vision and the matter to mirror) / (Sv and Sc:The distance of the the vision and the matter to focus)

$¿\,lenses:\frac{1}{f}=(\frac{n_m}{n_o}-1)(\frac{1}{R_1}+\frac{1}{R_2})$ $T=\frac{1}{f}$ $\Lambda=v.T$

$E=h.f\,(\,foton\ enerjisi)$

$\Delta\Lambda=\Lambda'-\Lambda=\frac{h}{m_0 c}(1-\cos\theta)$ for the foton hitting an electron. Provisioned for Foton : E = P.c

Provisioned for the mass change :: $m=\frac{m_0}{\sqrt{1-\frac{v^2}{c^2}}}$

Provisioned for the ideal gases: PV = nRT [T:K, n:mol number]