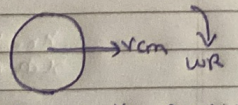
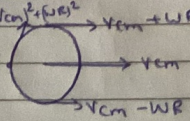
~~Tips~~ TIPS and tricks

(i) Pseudo force → Always Apply when you are in non-inertial frame.

(ii) Rolling :→ $v_{cm} = \omega R$; here ; ~~is~~ ?



You can determine the velocity of different Point as :→



Point to be noted →

⇒ for rolling without slipping →

$v_1 = 2v_2$

$s_1 = 2s_2$

$a_1 = 2a_2$

other relation will be ~~s~~ in the same proportion.

(iii) $\tau = R \times f = \frac{dL}{dt} = I\alpha$ → only when there is rotation about fixed ~~fix~~ axis.

↓ Always valid (use with proper vector)

(IV) Precision :→ Remember $\vec{\tau}$ Changes $\vec{L}$; $\vec{L}$ Can be changed by ~~Four~~ Three ways ~~Either~~ :→

(i) $|\vec{L}|$ Change, $\vec{L}$ dirⁿ remains same.

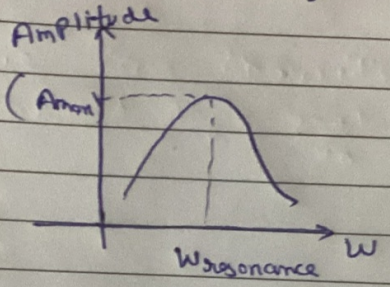
(ii) $\vec{L}$ dirⁿ Changes, $|\vec{L}|$ remain same

(iii) Both dirⁿ and magnitude Change.

(*) Case 2 is ~~Primarily~~ Primary Condition of Precision { $\vec{L}$ Changes it's dirⁿ continously }

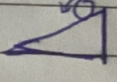
Date

(V) Oscillation :→ The maximum Amplitude occur near resonance frequency.



(VI) Formulae for ~~friction~~ and acceleration when a solid object roll down on Slide (incline).

$$Fr = \left(\frac{g\sin\theta}{1+\frac{R^2}{k^2}}\right) m \qquad \Rightarrow a = \frac{g\sin\theta}{1+\frac{k^2}{R^2}}$$



where $I = mk^2$

Remember this Both formulae