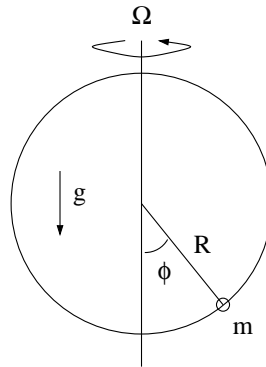


[mex39] **Pendulum oscillations in rotating plane**

A particle of mass m is constrained (without friction) to move on a circular path of radius R which rotates about its vertical diameter with constant angular velocity Ω of the particle. (a) Determine the stable equilibrium position $\phi_0(\Omega, g, R)$. (b) Determine the angular frequency $\omega(\Omega, g, R)$ of small oscillations of the particle about the stable equilibrium position.



Solution: