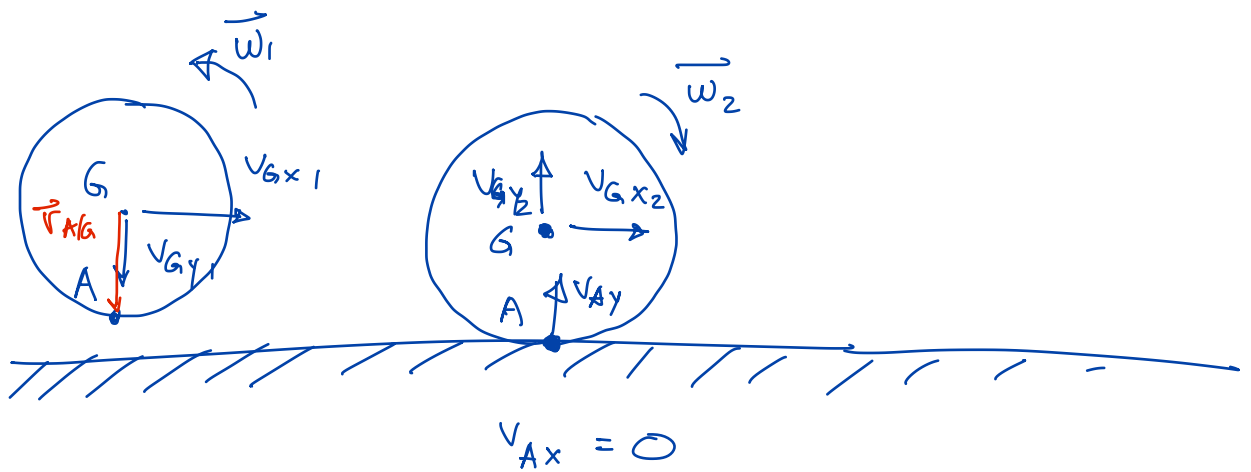


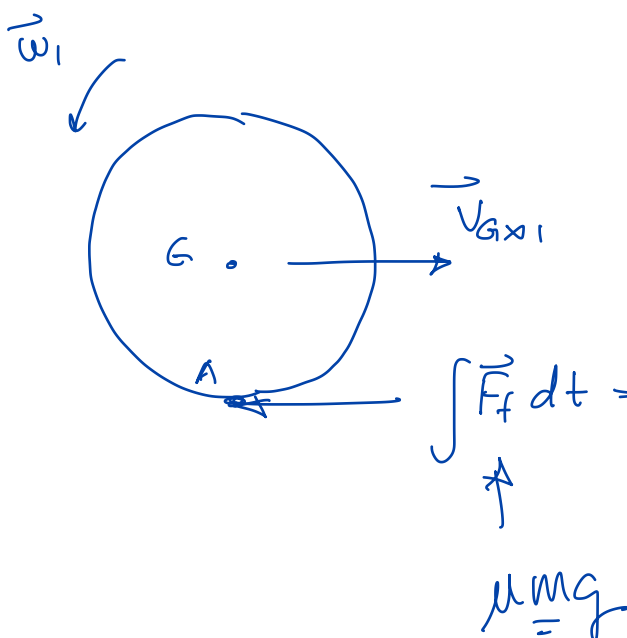
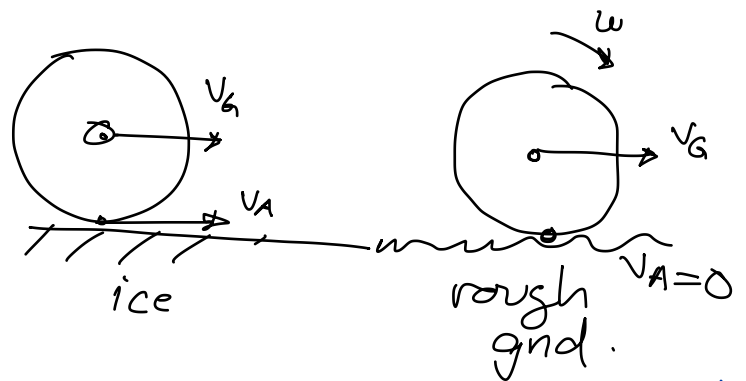
state 1



state 1

$$\vec{v}_A = \vec{v}_G + \underbrace{\vec{\omega}_1 \times \vec{r}_{A/G}}_{\substack{\rightarrow \downarrow \\ \rightarrow \\ = \rightarrow \downarrow}}$$

$$\vec{v}_G = \vec{v}_A$$



$$\left. \begin{aligned} \vec{L}_1 + \vec{I}_f &= 0 \\ \vec{H}_{G,1} + \vec{r}_{A/G} \times \vec{I}_f &= 0 \end{aligned} \right\} \begin{aligned} \vec{L}_2 &\Rightarrow -\vec{L} \\ \vec{H}_{G,1} &\Rightarrow m \dot{\vec{r}} \end{aligned}$$