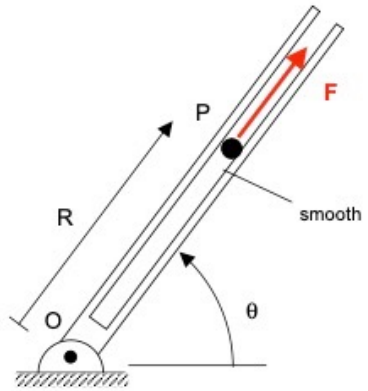
Rapid-fire questions quiz – ME 274 – Spring 2025

Name SOLUTION

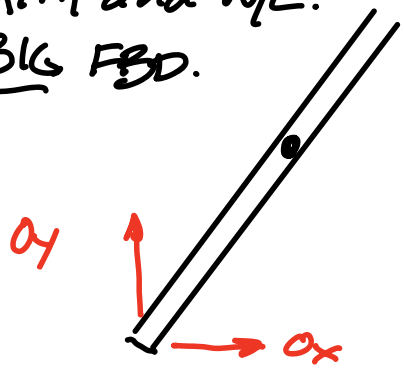
#1



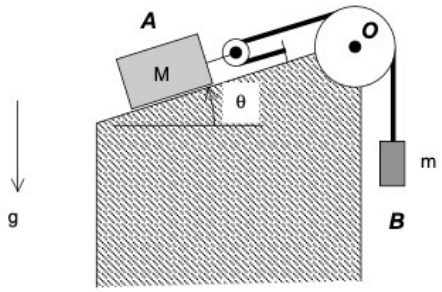
HORIZONTAL PLANE

Determine the *velocity* of P after P has moved outward in the slot. Everything is smooth.

- Change in velocity where velocity has both radial and transverse comps ⇒ A|M and W|E. B|G FBD.

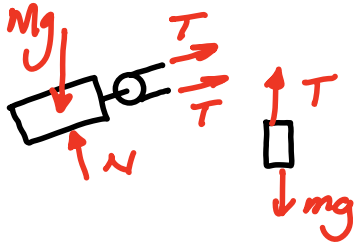


#2

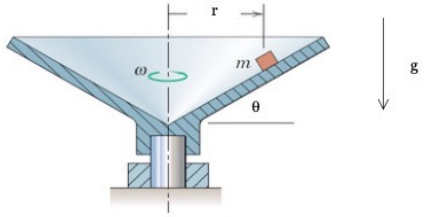


Determine the *accelerations* of A and B on release. Everything is smooth.

- Relate accelerations to forces ⇒ Newton.
- Individual FBDs

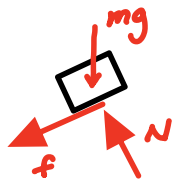


#3



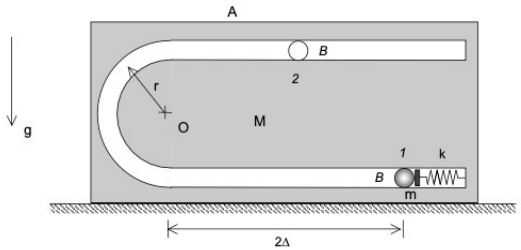
Determine the maximum ω for no slip. Friction present.

- Relate accelerations to forces ⇒ Newton
- Individual FBDs



(Friction points inward since impending motion outward)

#4



Determine the *velocities* of A and B at position 2. Everything is smooth.

- Change in velocity.
- Need both W|E and L|M for the two velocities ⇒ B|G FBD!