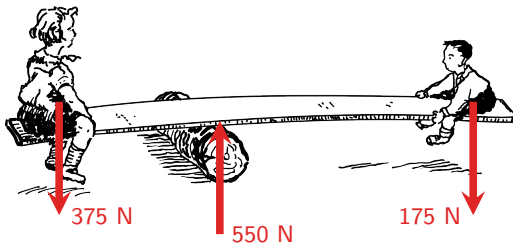


05 Moments and Couples

Engineering Statics

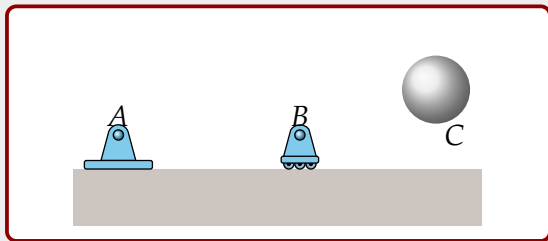
Updated on: September 18, 2025

- So far, we have concerned ourselves with forces acting at a single point (or particle)
- We have learned how to analyze the (concurrent) forces acting at this point.
- We now start to look at non-concurrent forces, where several forces act upon a body but at different locations.



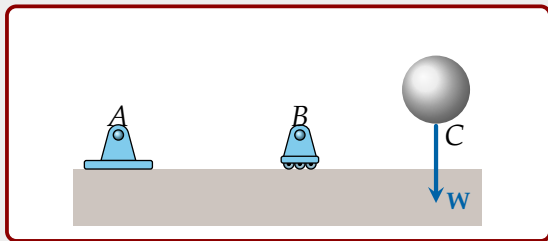
Non-Concurrent Forces

- ▶ We assume that ABC is a **rigid** beam and that it doesn't deflect under the load C . We also assume that the weight of the beam is negligible compared to loads imposed upon it.
- ▶ External, non-concurrent forces act upon ABC :



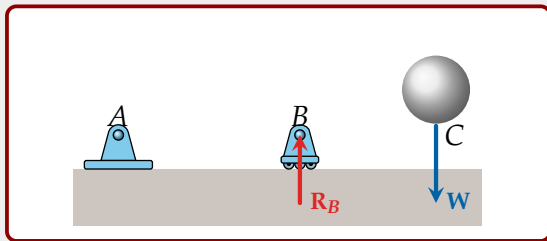
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 - ▶ A reaction, R_B , from the roller at B , perpendicular to the surface the roller is resting on,
 - ▶ Horizontal and vertical components, R_{Ax} and R_{Ay} , of the reaction from the pinned connection at A .

