



Science Virtual Learning

MPI Physics

Rotational Dynamics 2: Equilibrium 0

April 20, 2020



Lesson: MPI Rotational Dynamics 2 - Equilibrium 0
April 20, 2020

Objective: To understand how forces and torques cancel to keep an object in equilibrium

The following video discusses the conditions under which an object will remain in equilibrium

Part 1: <https://youtu.be/sEjl8KVxtwg>

Part 2: https://youtu.be/x2fe8FC4N_c

Video: Equilibrium Conditions



A 4.00 m long ramp of mass 45.0 kg extends out the back of a U-Haul truck. It can pivot about the point at the top where it is connected to the truck. A person lifts the other end, and holds the ramp horizontal and stationary. How much lift force does the person exert on the ramp?



Equilibrium Example



Homework

You and your sibling are having a shoving match on both sides of the bathroom door, which is 0.800 m wide. Your sibling pushes straight into the door at its center, 0.400 m from the hinge, with 85.0 N of force. You, being smarter, push straight into the door on the other side, near the edge, 0.700 m from the hinge. How much force must you exert to keep the door from rotating?

- Try to solve the problem yourself, then watch the solution video:
- <https://youtu.be/2IA4durBa1I>



That's it!

