



Science Virtual Learning

MPI Physics

Equilibrium 3: Ladder Problem

April 9, 2020



Lesson: MPI Equilibrium 3: Ladder Problem
April 9, 2020

Objective: To analyze the force and torques acting on a ladder in equilibrium

- This video discusses the equilibrium of forces and torques acting on a ladder resting against a wall

<https://youtu.be/J0pMdKDLmzs>

Video: Equilibrium of a
Ladder



This is a diagram with measurements for the homework problem on the next slide

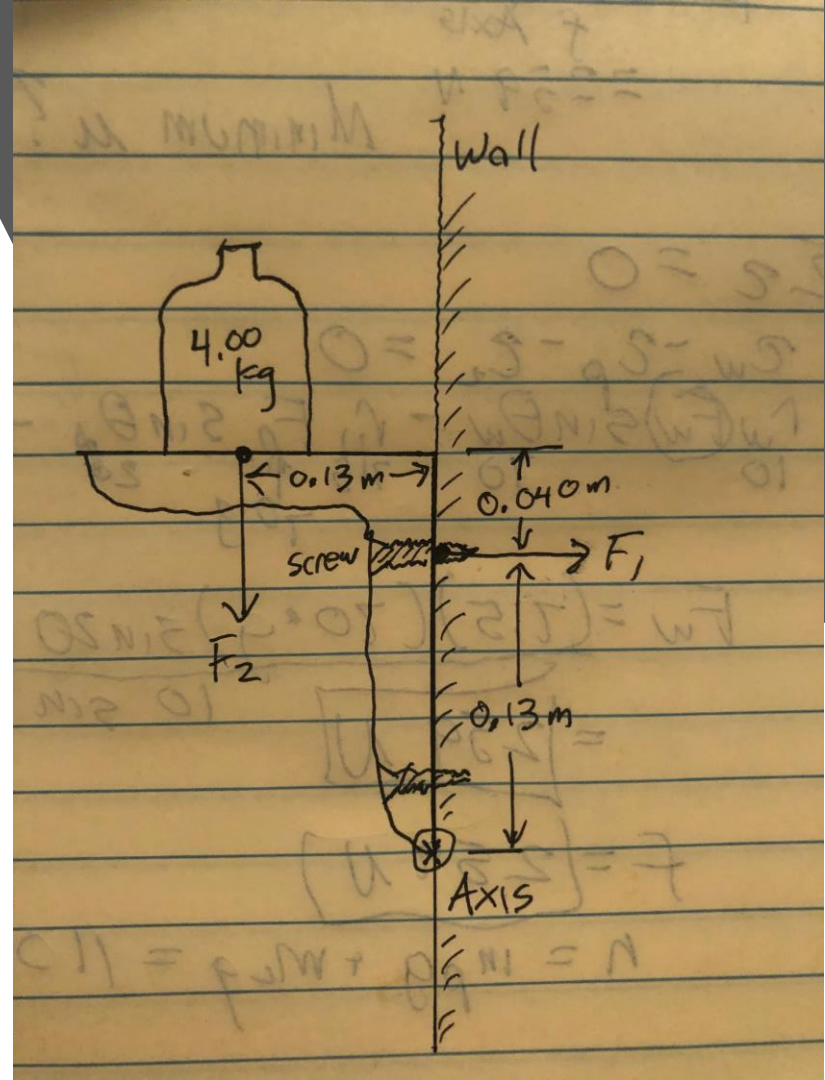


Diagram for Homework

Homework

A bracket is used to mount a shelf to a wall – see diagram. The bracket is 0.170 m tall, and is mounted to the wall with a screw 0.040 m from the top. A second screw is at the bottom, but is loose, so ignore it. The bracket holds up a shelf with a 4.00 kg jug on top, 0.130 m from the wall. Ignore the mass of the bracket and shelf. How much force does the top screw exert on the bracket to keep it in equilibrium? Use the bottom of the bracket as the rotation axis.

- Try to solve the problems yourself, then watch the solution video here:
- <https://youtu.be/oU1LANwxbdg>
- That's it!