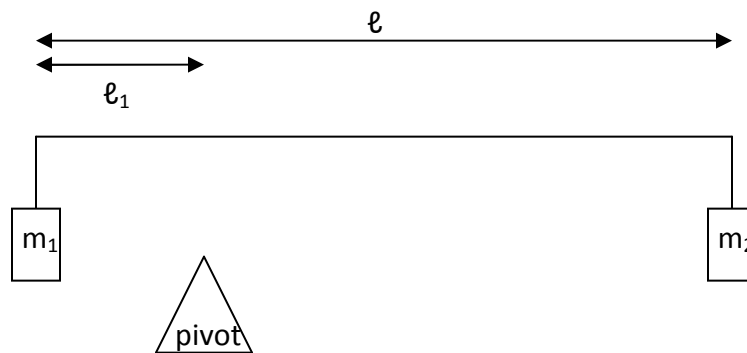


Static equilibrium and torque physics problem:

You happen to have a massless rod of length ℓ with two masses, m_1 and m_2 , attached to either side of the rod and a pivot. You'd like to place the rod and masses on the pivot in such a way that the rod remains stationary after you let go. What distance ℓ_1 from the left end of the rod should you place on the pivot? See Figure. Express your answer in terms of m_1 , m_2 , and ℓ .

Figure



Learning Objectives:

Understand torque and static equilibrium. Practice applying these principles to a very simple problem.