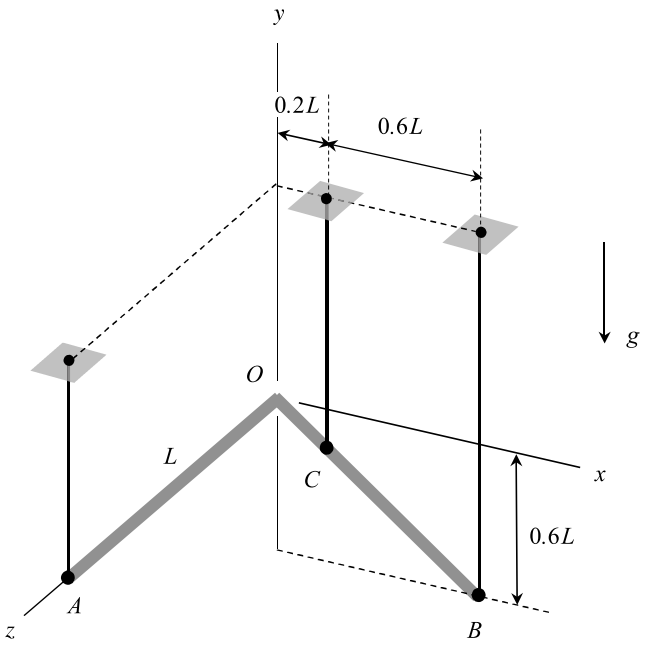
Homework H11.A

Given: A L-shaped bar is made up of straight segments AO and OB joined together at O. Each segment was a weight of W, with the center of mass of each segment at its midpoint. The bar is supported by vertical cables at locations A, C and B, with segment AO aligned with the z-axis and segment OB in the xy-plane.

Find: Determine the tension in each cable in order for the bar to be in equilibrium. Express your answers in terms of W.



Homework H11.B

Given: The door is loaded at D with a force F and is supported by a cable CE and hinges at A and B. The cable carries a tension of T_{CE}. The hinge at B *carries* a load in the x-direction and the hinge at A *does NOT* carry a load in the x-direction. The weight of the plate is negligible compared to the applied load at D.

Find:

a) Determine the load F.
b) Determine the reactions at hinges A and B.

Use the following parameters in your analysis: T_{CE} = 250 N, h = 0.80 m and d = 1 m.