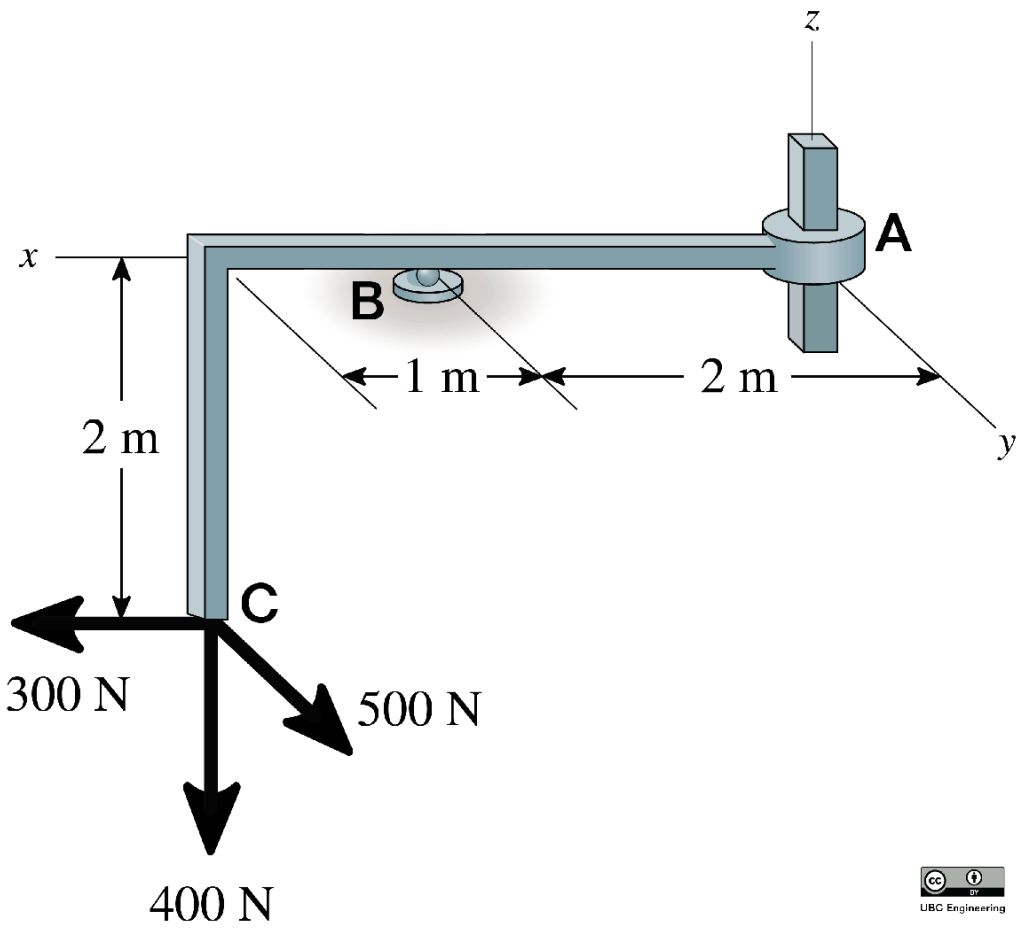
21-S-5.5-RP-01



The metal member is held in equilibrium. The member is supported by a square bar fitted through a smooth square hole of the attached collar at point A and by a roller at point B. Determine the number of unknown support reaction components in the free body diagram.

Select the unknown reaction components, for each support, that need to be included in a FBD.

Point A: A_x, A_y, $(M_x)_A$, $(M_y)_A$, $(M_z)_A$

Point B: B_z

Assuming that components are positive when directed along the positive axes, find the possible values of the reaction components given the support types used. Ignore internal forces. (Ex. if a support can only push to the right but not pull to the left, then the correct answer is ≥ 0)

A_x: All

A_y: All

A_z: 0

$(M_x)_A$: All

$(M_y)_A$: All

$(M_z)_A$: All

$(M_x)_B$: 0

$(M_y)_B$: 0

$(M_z)_B$: 0

B_x: 0

B_y: 0

B_z: $\geq$ 0