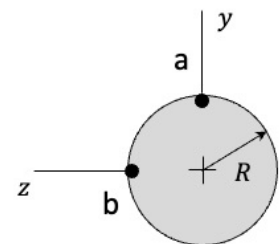
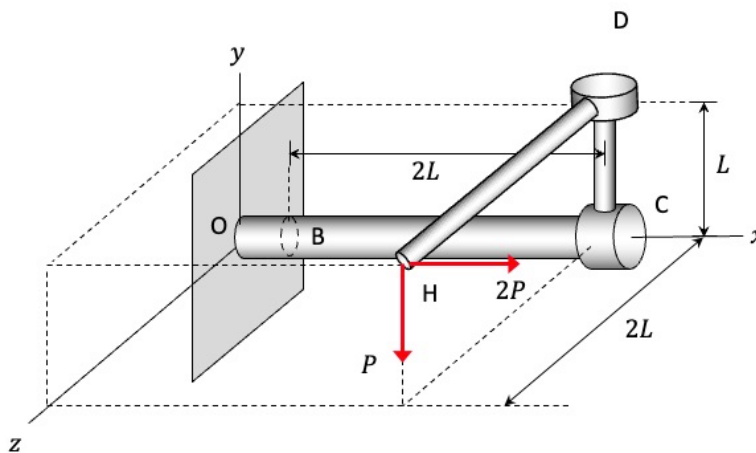


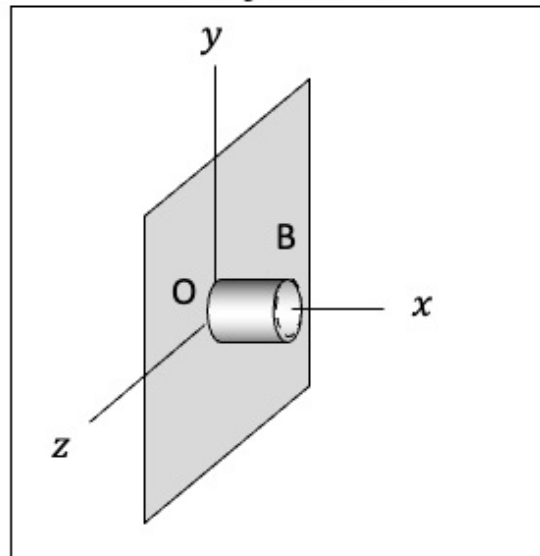
A 3D bracket is made up of sections OC, CD and DH, as shown below. The bracket is fixed to a wall at end O and is loaded with two forces at end H: a force $2P$ in the positive x -direction and a force P in the negative y -direction. It is desired to know the states of stress at locations “a” and “b” on the cross-section of OC at B.

- Complete the FBD of the section of the bracket to the right of location B on OC. Show this on the FBD figure provided on the next page.
- Determine the internal resultants shown in your FBD.
- Based on your results from b), draw the internal resultants in their actual directions on the positive x -face of the cut at B. Do not include signs.
- Show the stress distributions acting on the $+x$ -face at the cut at location B. Please use the front/top views of this cut provided on the next page. Show these distributions as they actually are - do not include signs.
- Fill in the table provided on the next page with the stress components at “a” and “b”. Please do not include signs. Show the relationships between the stress components and applied loads in this table.
- Based on the results in your table from Part e), show the state of stress at “a” and “b” on the stress elements on the next page.

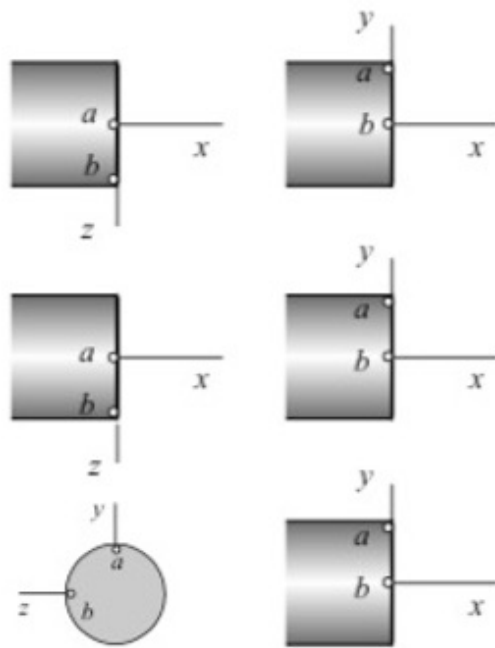
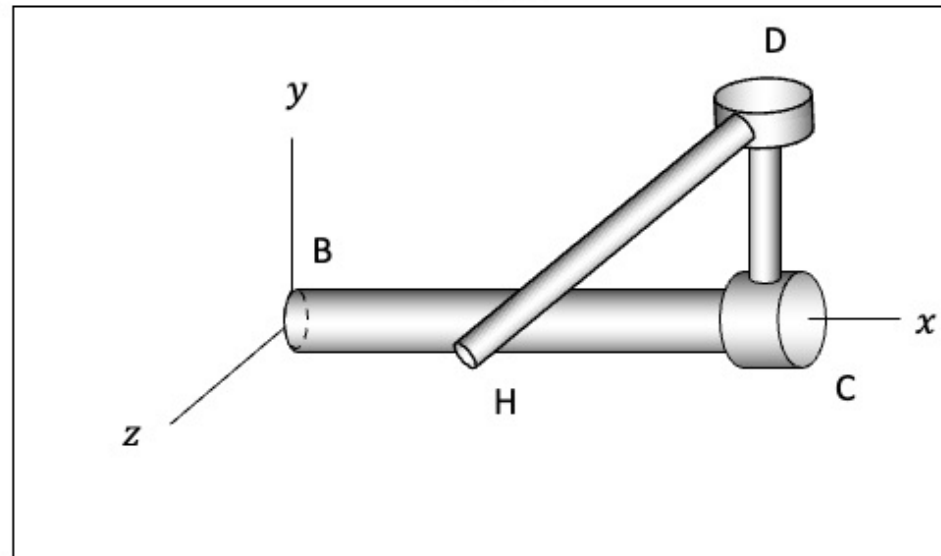


**cross-section
of OC at B**

"+" x-face at B

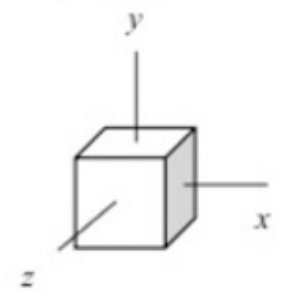


FBD



<i>loading</i>	<i>stress comp. @ "a"</i>	<i>stress comp. @ "b"</i>

point "a"



point "b"

