Department of Mechanical Engineering (NITC) 7.7.1001D ENGINEERING MECHANICS

S1ME ZZ1001D ENGINEERING MECHANICS Tutorial Test 3-Set 5

Time: One Hour Maximum Marks: 20

1. Locate the centroid of the semi-elliptical area shown in Fig.1.

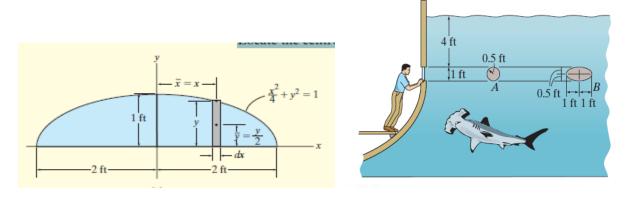


Figure 1 Figure 2

2. Determine the magnitude of the hydrostatic force acting on the glass window if it is circular, A. The specific weight of seawater is $gw = 63.6 \text{ lb/ft}^3$.

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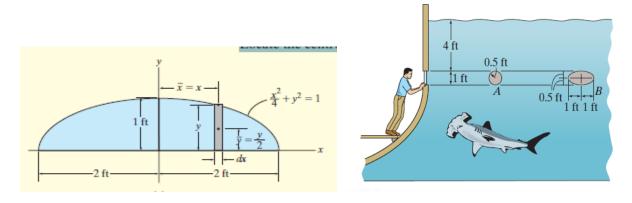


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-----P.T.O------P.T.O-------

- 3. Locate the centre of gravity of the volume the material is homogeneous Fig. 3.
- 4. Determine the projected component of the force $F_{AB} = 560N$ acting along cable AC. Express the result as a Cartesian vector. (Fig. 4)

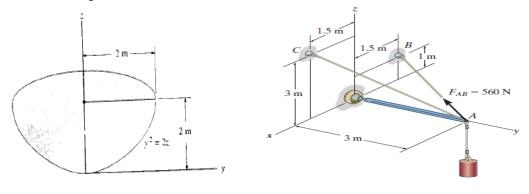


Figure 3 Figure 4

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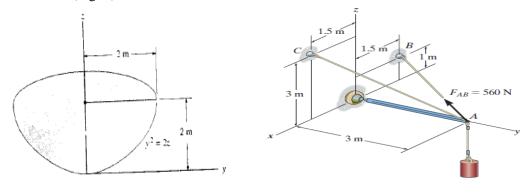


Figure 3 Figure 4