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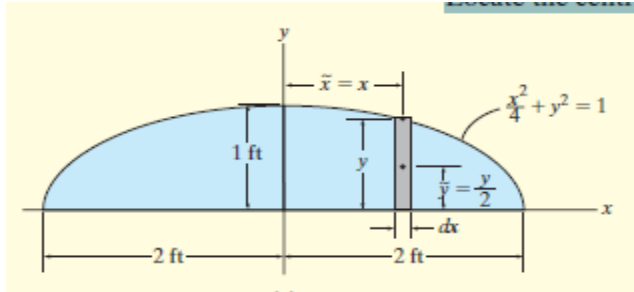


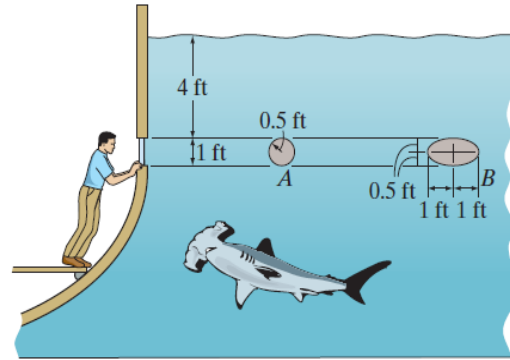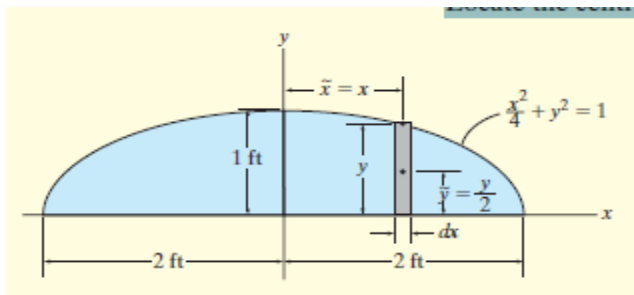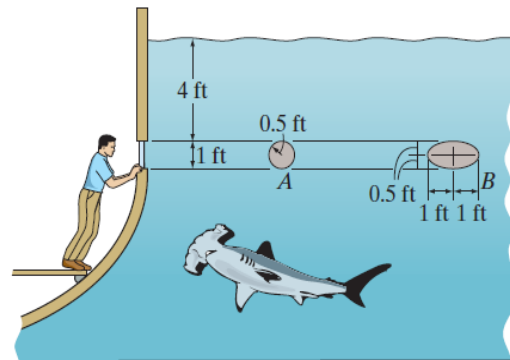Figure 1                                    Figure 2

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

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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)
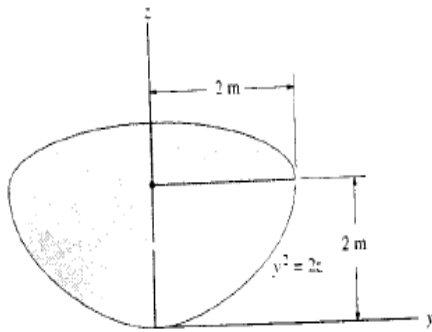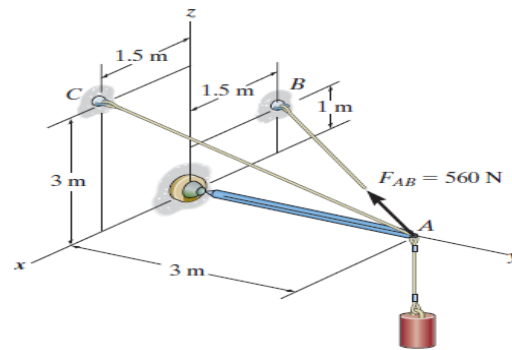


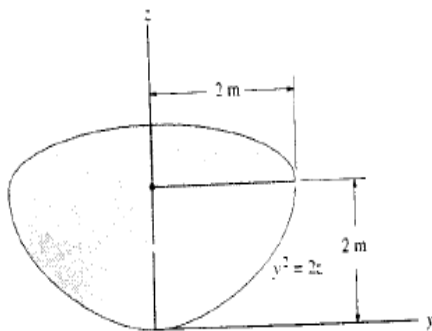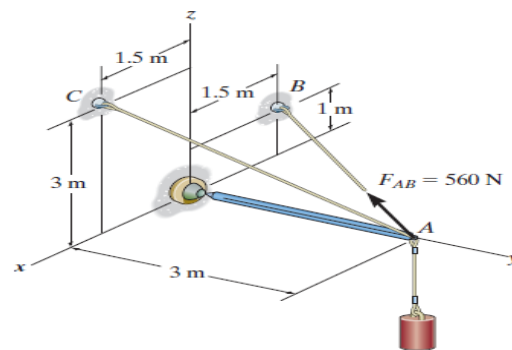Figure 3



Figure 4