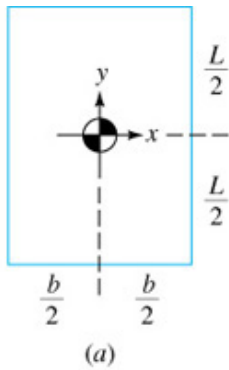
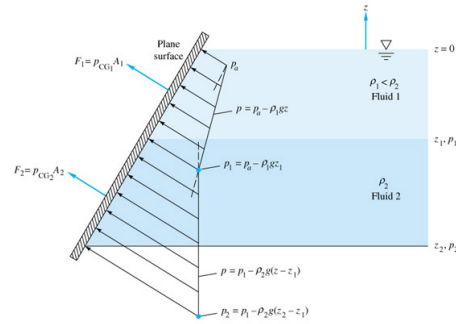
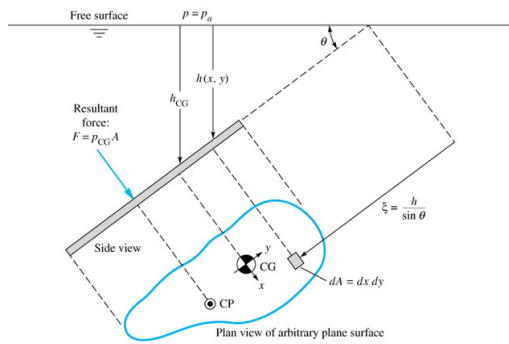


Hydrostatic Relations, Centroids, and Area Moments of Inertia

$$dp/dz = -\rho g \quad \Delta p = \rho gh \quad F = p_c A \quad y_{cp} = \rho g \sin \theta I_{xx} / F \quad x_{cp} = \rho g \sin \theta I_{yy} / F$$

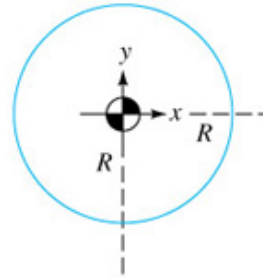


$$A = bL$$

$$I_{xx} = \frac{bL^3}{12}$$

$$I_{xy} = 0$$

(a)

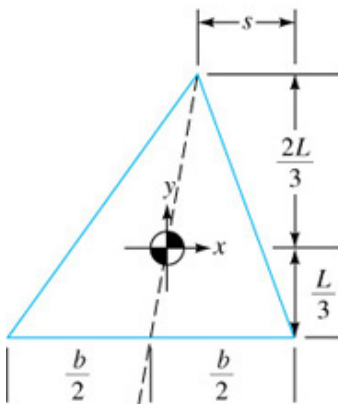


$$A = \pi R^2$$

$$I_{xx} = \frac{\pi R^4}{4}$$

$$I_{xy} = 0$$

(b)

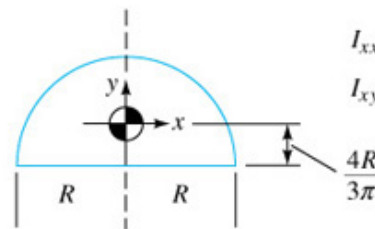


$$A = \frac{bL}{2}$$

$$I_{xx} = \frac{bL^3}{36}$$

$$I_{xy} = \frac{b(b - 2s)L^2}{72}$$

(c)



$$A = \frac{\pi R^2}{2}$$

$$I_{xx} = 0.10976 R^4$$

$$I_{xy} = 0$$

(d)