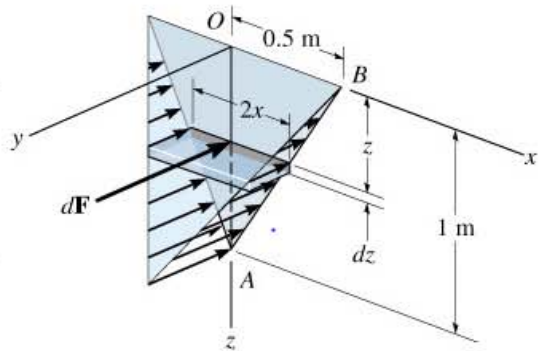


(a)

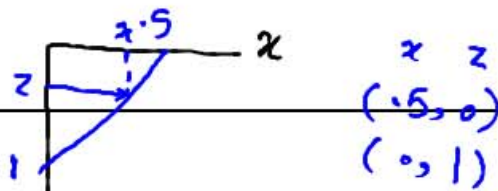
فشاریاتیات

$$\rho_w = 1000 \frac{\text{kg}}{\text{m}^3}$$



(b)

$$F_R = \int p dA = \int \gamma z dA = \int \gamma z (2x dz)$$



$$z = -2(x - 0.5)$$

$$x = \frac{-z}{2} + 0.5$$

$$F_R = \int \gamma z (-z + 1) dz = \gamma \left(-\frac{z^3}{3} + \frac{z^2}{2} \right) \Big|_0^1 = 9810 \left(-\frac{1}{3} + \frac{1}{2} \right)$$

$$\bar{z} = \frac{\int z p dA}{\int p dA} = \frac{\int z (\gamma z) dA}{\int p dA} = \frac{9810}{6} = 1635 \text{ N}$$

$$\gamma \int z^2 dA = \gamma I_x = \gamma \int z^2 (2x dz) = \gamma \int z^2 (-z + 1) dz$$

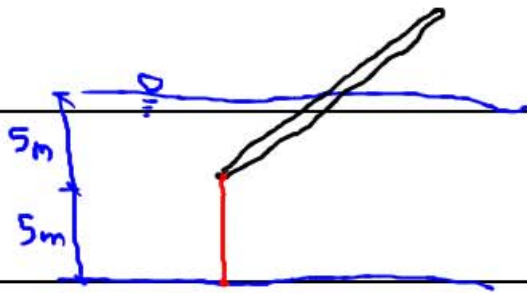
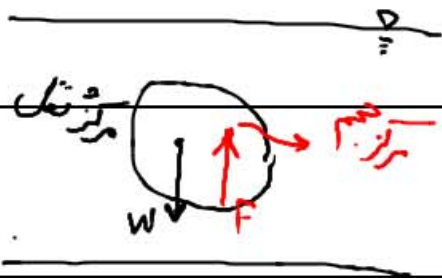
$$= \gamma \left(-\frac{z^4}{4} + \frac{z^3}{3} \right) \Big|_0^1 = 9810 \left(-\frac{1}{4} + \frac{1}{3} \right) = \frac{9810}{12} = 817.5 \text{ N}\cdot\text{m}$$

$$\bar{z} = \frac{817.5}{1635} = 0.5 \text{ m.}$$

$$F = \rho g V$$

قانون ارسطیدس

شناوری :



$$\rho = 1000 \frac{\text{kg}}{\text{m}^3}$$

$$d_b = 0.2 \text{ m}$$

$$l = 8 \text{ m}$$

مثال :

