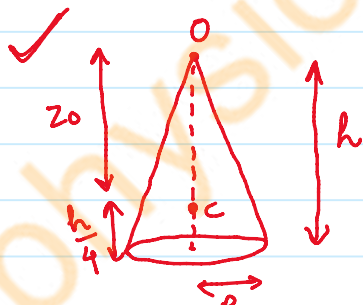


$$\frac{7}{12} = \frac{\left(\frac{a}{2} + \frac{b}{3}\right)}{\left(a + \frac{b}{2}\right)} \Rightarrow 7a + 3.5b = 6a + 4b$$

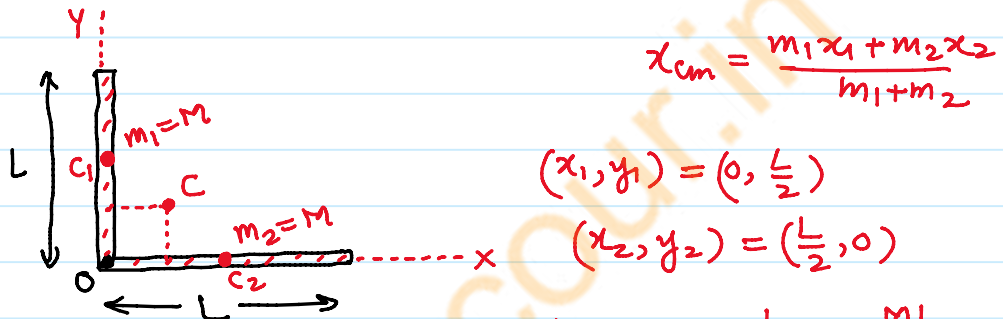
$$a = 0.5b$$

$$\boxed{2a = b}$$



$$z_0 = h - \frac{h}{4} = \frac{3h}{4}$$

Ex:



$$x_{cm} = \frac{m_1 x_1 + m_2 x_2}{m_1 + m_2}$$

$$(x_1, y_1) = \left(0, \frac{L}{2}\right)$$

$$(x_2, y_2) = \left(\frac{L}{2}, 0\right)$$

$$x_{cm} = \frac{M \times 0 + M \times \frac{L}{2}}{M + M} = \frac{\frac{ML}{2}}{2M} \Rightarrow \boxed{x_{cm} = \frac{L}{4}}$$

$$y_{cm} = \frac{m_1 y_1 + m_2 y_2}{m_1 + m_2} \Rightarrow y_{cm} = \frac{M \cdot \frac{L}{2} + M \times 0}{M + M}$$

$$\boxed{y_{cm} = \frac{L}{4}}$$

$$\text{So, } CM \equiv \left(\frac{L}{4}, \frac{L}{4}\right)$$

Note: CM of a body or system of bodies may be outside the body.

