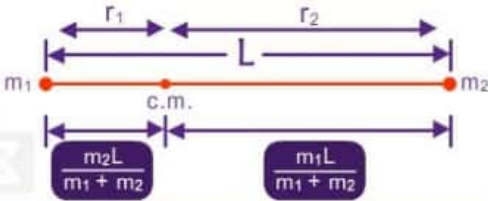


# CENTRE OF MASS OF SOME COMMON SYSTEM

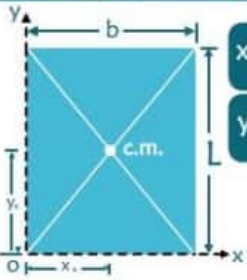
## System of Two Point Masses

$$m_1 r_1 = m_2 r_2$$

The Centre of mass lies closer to the heavier Mass.



## Rectangular Plate (By symmetry)

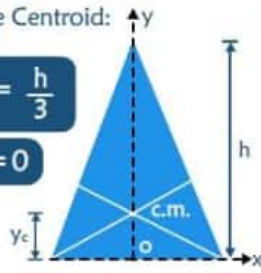


$$x_c = \frac{b}{2}$$

$$y_c = \frac{L}{2}$$

## Triangular Plate (By qualitative argument)

At the Centroid:



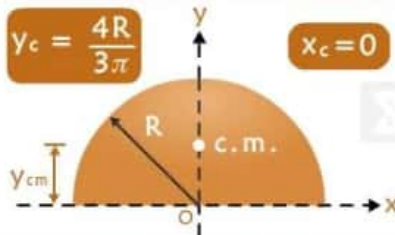
$$y_c = \frac{h}{3}$$

$$x_c = 0$$

## Semi-Circular Disc

$$y_c = \frac{4R}{3\pi}$$

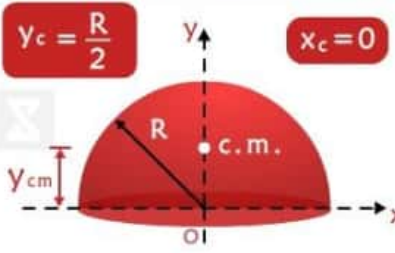
$$x_c = 0$$



## Hemispherical Shell

$$y_c = \frac{R}{2}$$

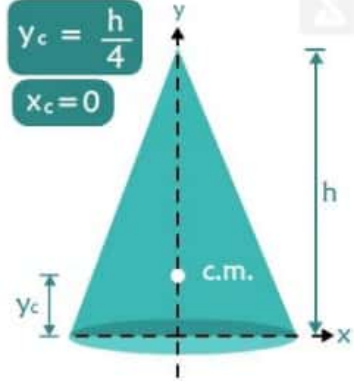
$$x_c = 0$$



## Circular Cone (Solid)

$$y_c = \frac{h}{4}$$

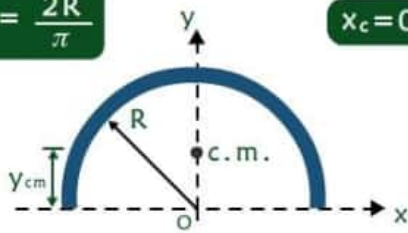
$$x_c = 0$$



## Semi-Circular Ring

$$y_c = \frac{2R}{\pi}$$

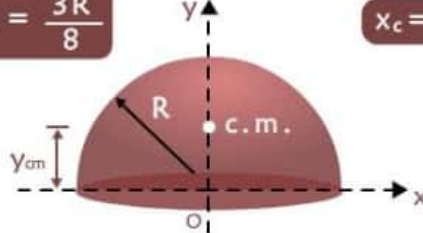
$$x_c = 0$$



## Solid Hemisphere

$$y_c = \frac{3R}{8}$$

$$x_c = 0$$



## Circular Cone (Hollow)

$$y_c = \frac{h}{3}$$

$$x_c = 0$$

