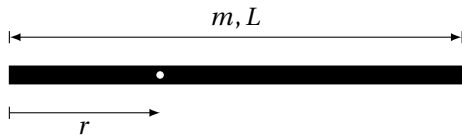
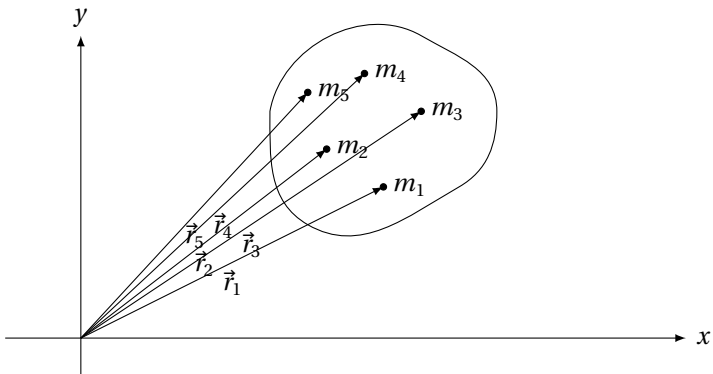


Center of Mass

# 1. Center of mass



2. Center of mass for a system  $\rightarrow$  mass moment

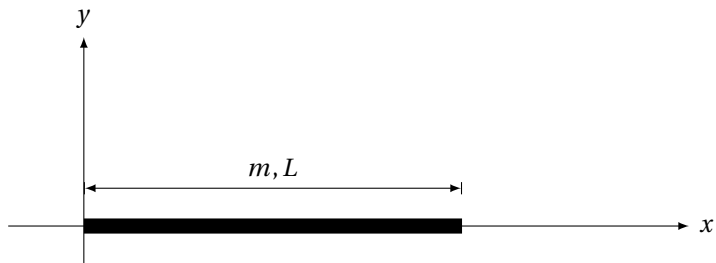


$$\vec{r}(m_1+m_2+\cdots+m_n)=\vec{r}_1m_1+\vec{r}_2m_2+\cdots+\vec{r}_nm_n$$

$$\vec{r}\left(\sum_{i=0}^{i=n}m_i\right)=\sum_{i=0}^{i=n}(\vec{r}_im_i)$$

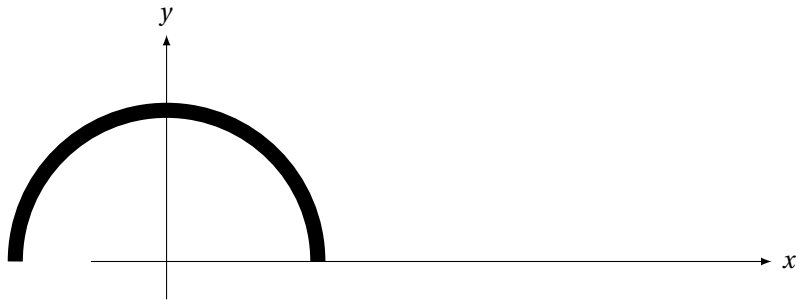


### 3. Center of mass for rod





#### 4. Center of mass for semi-circular ring







5. Center of mass of the remaining part

