# Center of gravity problem

$(x_1, y_1) = (0, 1m)$ $\quad m_1 = 1\,kg$

$(x_2, y_2) = (0, 0)$ $\quad m_2 = 1\,kg$

$(x_3, y_3) = (1m, 0)$ $\quad m_3 = 2\,kg$

$$x_{cg} = \frac{x_1 m_1 + x_2 m_2 + x_3 m_3}{m_1 + m_2 + m_2}$$

$$= \frac{0 + 0 + (1m)(2kg)}{1\,kg + 1kg + 2\,kg}$$

$$= \frac{2m \cdot kg}{4\,kg} = 0.5\ m$$

$$y_{cg} = \frac{y_1 m_1 + y_2 m_2 + y_3 m_3}{m_1 + m_2 + m_3}$$

$$= \frac{(1m)(1\,kg) + 0 + 0}{m_1 + m_2 + m_3}$$

$$= 0.25\ m$$