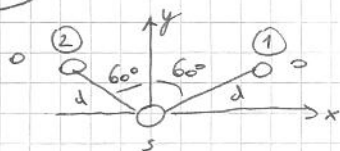


7.30



$$d = 143 \text{ pm}$$

$$\vec{r}_{CM} = \frac{\vec{r}_5 \cdot m_5 + \vec{r}_{O1} \cdot m_O + \vec{r}_{O2} \cdot m_O}{m_5 + 2 m_O}$$

sur x:
$$x_{CM} = \frac{x_5 \cdot m_5 + x_{O1} \cdot m_O + x_{O2} \cdot m_O}{m_5 + 2 m_O} = \frac{0 + 143 \cos 30^\circ \cdot m_O - 143 \cos 30^\circ \cdot m_O}{m_5 + 2 m_O} = 0$$

sur y:
$$y_{CM} = \frac{y_5 \cdot m_5 + y_{O1} \cdot m_O + y_{O2} \cdot m_O}{m_5 + 2 m_O} = \frac{0 + 143 \cos 60^\circ \cdot m_O + 143 \cos 60^\circ \cdot m_O}{m_5 + 2 m_O} = \frac{286 \cos 60^\circ m_O}{m_5 + 2 m_O}$$

$$y_{CM} = 143 \cdot \frac{m_O}{m_5 + 2 m_O} = 143 \cdot \frac{16}{32 + 32} = \frac{143}{4} \approx 35,8 \text{ pm}$$

$$\Rightarrow \underline{\underline{\vec{r}_{CM} = (0 ; 35,8 \text{ pm})}}$$