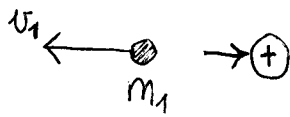
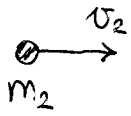


$$30.) \quad m_1 + m_2 = 12 \text{ kg} \quad v_1 = -6 \frac{\text{m}}{\text{s}} \quad v_2 = 4 \frac{\text{m}}{\text{s}} \quad v_k = 0,25 \frac{\text{m}}{\text{s}}$$

$$(i) \quad m_1 = ? \quad m_2 = ? \quad (ii) \quad \Delta E_k (\%) = ?$$



$$\vec{p} = m\vec{v}$$

$$\vec{p} = \text{'all'}$$

$$(i) \quad \vec{p}_k = \vec{p}_v$$

$$m_1 v_1 + m_2 v_2 = (m_1 + m_2) v_k \quad m_2 = 12 \text{ kg} - m_1$$

$$m_1 v_1 + (12 \text{ kg} - m_1) v_2 = 12 \text{ kg} v_k$$

$$\Downarrow$$

$$\underline{\underline{m_1}} \rightarrow \underline{\underline{m_2}}$$

$$(ii) \quad \Delta E_k = E_{kv} - E_{kk} = \frac{1}{2} (m_1 + m_2) v_k^2 - \frac{1}{2} m_1 v_1^2 - \frac{1}{2} m_2 v_2^2 = \dots$$

$$\Delta E_k (\%) = \frac{\Delta E_k}{E_{kk}} \cdot 100\% = \dots$$