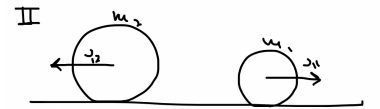
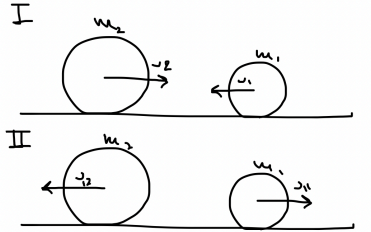


Бекешева Анастасія ФІ-12



$$\begin{cases} \frac{m_1 \vec{v}_1^2}{2} + \frac{m_2 \vec{v}_2^2}{2} = \frac{m_1 \vec{v}_{11}^2}{2} + \frac{m_2 \vec{v}_{12}^2}{2} \\ m_1 \vec{v}_1 + m_2 \vec{v}_2 = m_1 \vec{v}_{11} + m_2 \vec{v}_{12} \end{cases} \Rightarrow \begin{cases} m_1(\vec{v}_1 - \vec{v}_{11})(\vec{v}_1 + \vec{v}_{11}) = m_2(\vec{v}_{12} - \vec{v}_2)(\vec{v}_{12} + \vec{v}_2) \\ m_1(\vec{v}_1 - \vec{v}_{11}) = m_1(\vec{v}_2 - \vec{v}_{12}) \end{cases}$$

$$\begin{cases} \vec{v}_1 + \vec{v}_{11} = \vec{v}_2 + \vec{v}_{12} \\ m_1(\vec{v}_1 - \vec{v}_{11}) = m_1(\vec{v}_2 - \vec{v}_{12}) \end{cases}, v_{11} = \frac{(m_2 - m_1)v_1 + 2m_2v_2}{m_1 + m_2}, v_{12} = \frac{(m_1 - m_2)v_2 + 2m_1v_1}{m_1 + m_2}$$

$$v_{11} = 3.4 \text{ m/s}, v_{12} = 3.6 \text{ m/s}$$