

1.) (6.11.) alternate approach:

$$f = m_1 + m_2 + m_3$$

$$\text{subject to } \Delta v_1 + \Delta v_2 + \Delta v_3 - \Delta v_7 = 0$$

$$\text{or } \sum_{i=1}^n c_i \ln \left[\frac{m_i + m_{i+1} + \dots + m_n + m_i}{\varepsilon_i m_i + m_{i+1} + \dots + m_n + m_i} \right] - \Delta v_7 = 0$$

where $n=3$