(II) Orbit adjustment.

For #1 and #2 respectively

$$\begin{cases} \Delta m_1 = m_1 - m_1 \cdot e^{-\Delta v_1 / I_{sp} \cdot g} \\ \Delta m_2 = m_2 - m_2 \cdot e^{-\Delta v_2 / I_{sp} \cdot g} \end{cases}$$

$$m_2 = m_1 - \Delta m_1$$

$$\begin{aligned} \Delta m_{total} &= \Delta m_1 + \Delta m_2 \\ &= m_1 - m_1 \cdot e^{-\Delta v_1 / I_{sp} \cdot g} + m_2 - m_2 \cdot e^{-\Delta v_2 / I_{sp} \cdot g} \\ &= m_1 - m_1 \cdot e^{-\Delta v_1 / I_{sp} \cdot g} + m_1 - \Delta m_1 - m_1 \cdot e^{-\Delta v_2 / I_{sp} \cdot g} \\ &\quad + \Delta m_1 \cdot e^{-\Delta v_2 / I_{sp} \cdot g} \\ &= \cancel{m_1} - \cancel{m_1 \cdot e^{-\Delta v_1 / I_{sp} \cdot g}} + m_1 - \\ &\quad \cancel{-m_1} + \cancel{m_1 \cdot e^{-\Delta v_1 / I_{sp} \cdot g}} - \cancel{m_1 \cdot e^{-\Delta v_2 / I_{sp} \cdot g}} + \\ &\quad + \cancel{m_1 \cdot e^{-\Delta v_2 / I_{sp} \cdot g}} - m_1 \cdot e^{-\Delta v_1 / I_{sp} \cdot g} \cdot e^{-\Delta v_2 / I_{sp} \cdot g} \\ &= m_1 - m_1 \cdot e^{-\Delta v_1 / I_{sp} \cdot g} \cdot e^{-\Delta v_2 / I_{sp} \cdot g} \\ &= m_1 \left(1 - e^{-\frac{\Delta v_1 + \Delta v_2}{I_{sp} \cdot g}}\right) \end{aligned}$$

The order of Δv_1 and Δv_2 is unimportant.