207. Kupferblock in Styropor

$$\rho = 8930\ \mathrm{kg/m^3}; \quad c = 385\ \mathrm{J/kg\,K}$$

a)

209. Limonade mit Eis

$$m_1 = 0.24\ \mathrm{kg}; \quad T_1 = 306.15\ \mathrm{K}; \quad m_2 = 0.025\ \mathrm{kg}; \quad T_2 = 273.15\ \mathrm{K}$$

a) $Q = cm\Delta T; \quad \Delta T = T_{Ende} - T_{Start}$

$$\begin{aligned} Q_1 &= cm_1(T - T_1) \\ Q_2 &= cm_2(T - T_2) \\ Q_1 + 2Q_2 &= 0 \\ \Rightarrow T &= \frac{m_1T_1 + 2m_2T_2}{m_1 + 2m_2} = \underline{\underline{300.46\ \mathrm{K}}} \qquad (= 27.31\ ^\circ\mathrm{C}) \end{aligned}$$

b)

$$\begin{aligned} Q_1 + 6Q_2 &= 0 \\ \Rightarrow T &= \frac{m_1T_1 + 6m_2T_2}{m_1 + 6m_2} = \underline{\underline{293.46\ \mathrm{K}}} \qquad (= 20.31\ ^\circ\mathrm{C}) \end{aligned}$$