66. We consider a three-step reversible process as follows: the supercooled water drop (of mass m) starts at state 1 ($T_1 = 268\,\mathrm{K}$), moves on to state 2 (still in liquid form but at $T_2 = 273\,\mathrm{K}$), freezes to state 3 ($T_3 = T_2$), and then cools down to state 4 (in solid form, with $T_4 = T_1$). The change in entropy for each of the stages is given as follows: $\Delta S_{12} = mc_w \ln(T_2/T_1)$, $\Delta S_{23} = -mL_F/T_2$, and $\Delta S_{34} = mc_I \ln(T_4/T_3) = mc_I \ln(T_1/T_2) = -mc_I \ln(T_2/T_1)$. Thus the net entropy change for the water drop is

$$\begin{aligned}
\Delta S &= \Delta S_{12} + \Delta S_{23} + \Delta S_{34} = m(c_w - c_I) \ln\left(\frac{T_2}{T_1}\right) - \frac{mL_F}{T_2} \\
&= (1.00\,\mathrm{g})(4.19\,\mathrm{J/g\cdot K} - 2.22\,\mathrm{J/g\cdot K}) \ln\left(\frac{273\,\mathrm{K}}{268\,\mathrm{K}}\right) - \frac{(1.00\,\mathrm{g})(333\,\mathrm{J/g})}{273\,\mathrm{K}} \\
&= -1.18\,\mathrm{J/K}\ .
\end{aligned}$$