Calculating $\Delta S$, constant $T$

Consider 10.0 g of ice, melting in a large ice bath at 0 °C.

Identify each of the following
- System
- Surroundings
- Conditions that are constant
- Reversible or irreversible change

Calculate the following
- $\Delta S_{\text{sys}}$
- $\Delta S_{\text{surroundings}}$
- $\Delta S_{\text{universe}}$

Ask for or look up any thermodynamic data you might need.
Calculating \( \Delta S \), changing \( T \)

Consider 10.0 g of liquid water, increasing in temperature from 0 °C to 10 °C.

Calculate \( \Delta S \) for the water

For this change to be spontaneous, what must \( \Delta S_{\text{surroundings}} \) be?

Ask for or look up any thermodynamic data you might need.