Calculate the entropy change for 2 mole of ice. Freezing point of water is 273 k and molar enthalpy for fashion is 6 KJ Mole^-1.

Entropy is a mathematically-defined thermodynamic quantity that helps to account for the flow of energy through a thermodynamic process. Entropy was originally defined for a thermodynamically reversible process as:

$$\Delta S = \int \frac{dQ_{rev}}{T}$$

where the uniform temperature (T) of a closed system is divided into an incremental reversible transfer of heat energy into that system (dQ_{rev}).

Therefore:

$$\Delta S = \int \frac{dQ}{273\ K} = \frac{Lv}{273\ K}$$

L - enthalpy for fashion

v - amount of ice

$$\Delta S = \frac{2mole*\frac{6KJ}{mole}}{273\ K} = \frac{12KJ}{273K} = 44\frac{J}{K}$$

Answer: $\Delta S = 44\frac{J}{K}$