6. Answer the following questions related to HBr$_{(l)}$ and HF$_{(l)}$.

a) In the following table, list all of the types of intermolecular forces present in pure samples of HBr$_{(l)}$ and HF$_{(l)}$.

Liquid	HBr(l)	HF(l)
Intermolecular forces present		

b) The enthalpy of vaporization, $\Delta H^0{}_{vap}$, for each liquid is provided in the following table.

Liquid	HBr(l)	HF(l)
ΔH°_{vap}	17.3 kJ / mol	25.2 kJ / mol

(i) Based on the types and relative strengths of intermolecular forces, explain why $\Delta H^0{}_{vap}$ of HF$_{(l)}$ is greater than that of HBr$_{(l)}$.

(ii) Calculate the amount of thermal energy, in kJ, required to vaporize 6.85 g of HF$_{(l)}$.

c) Based on the arrangement of electrons in the Br and F atoms, explain why the bond length in an HBr molecule is greater than that in an HF molecule.