1. Consider the system of 20g (0.1 mole) sample of liquid mercury at 1bar of pressure in an open beaker. Given the data below calculate the change in entropy of the universe to vaporize this sample at room temperature (25C). Normal boiling point of Hg is 356.7C. You may assume the heat capacities are constant over this temperature range.

Hg (lq) Hg (vap)



Heat capacities from: (<http://courses.chem.indiana.edu/c360/documents/thermodynamicdata.pdf>)

Heat of vaporization from (<http://en.wikipedia.org/wiki/Mercury_%28element%29>)