2. HELIUM (6 points) — *Jaan Toots.* Liquid helium is cooled under low pressure by vaporizing it and pumping the gas away. The heat of vaporization of helium is $\lambda = 22\,\mathrm{kJ\,kg^{-1}}$, which you can take to be constant. The specific heat of the liquid $c(T)$ is shown on the graph (a larger copy is on an extra sheet). What fraction of the liquid helium has to vaporize to cool the remaining liquid from $T_0 = 4.1\,\mathrm{K}$ to $T_1 = 2.3\,\mathrm{K}$?

