Chemistry 236 -- Practice Quiz 9
November 19, 2003 — Physical Adsorption of Gases

1. In Denver, because of the high elevation, "atmospheric pressure" is normally about 600 torr. What would be the temperature of liquid N_2 in an open Dewar at that pressure? [normal boiling point = 77.3 K, H_{vap} = 5.58 kJ/mol, R = 0.082058 L atm mol^{-1} K^{-1}]

2. Consider the apparatus pictured to the right. Initially this system is filled with He at a pressure of 512 torr and a temperature of 301 K. Then the 250-mL bulb is immersed in LN2 at 77 K. Calculate (a) the number of moles of He present, (b) the pressure after the small bulb is cooled to 77 K, and (c) the number of moles of He in each of the two bulbs in the latter case.