

ASSIGNMENT 1

CHEMISTRY 305

Due: 4:30 pm Friday 8 January 2010

1. Derive the Maxwell relations from the four thermodynamic potentials.
2. Evaluate $(\partial V/\partial T)_p$ for
 - (a) a perfect gas
 - (b) a hard-sphere gas
 - (c) a van der Waals gas
 - (d) a Berthelot gas
3. Do question 20 on page 486 of your text.
4. Find an expression for ΔS resulting from an isothermal volume change for a gas that obeys the Berthelot equation of state.