## ASSIGNMENT 1 CHEMISTRY 200 Due: 4:30 pm Wednesday 10 September 2008

- 1. Consider 4.59 moles of a perfect gas at 516000 Pa and 246 K.
  - (a) What is the volume of the gas?
  - (b) Write the expression for the total differential of the pressure of the gas.
  - (c) Using the expression from (b), calculate the contribution to the change in pressure of the gas by each of the following changes in sequence: (i) a temperature increase of 1% (ii) a volume increase of 2%, (iii) an decrease in the number of moles by 5%.
  - (d) Using the answer to (c), determine the final values of the pressure, temperature, volume, and number of moles.
  - (e) Compare the change in pressure calculated directly from the ideal gas law with the total of the values in (c). Discuss.