

ASSIGNMENT 1

CHEMISTRY 200

Due: 4:30 pm Monday 11 September 2006

1. Consider 4.15 moles of a perfect gas at 127000 Pa and 235 K.
 - (a) What is the volume of the gas?
 - (b) Write the expression for the total differential 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 decrease of 1% (ii) a volume decrease of 7%, (iii) an increase in the number of moles by 4%.
 - (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.

ASSIGNMENT 1

CHEMISTRY 200

Due: 4:30 pm Monday 11 September 2006

1. Consider 4.15 moles of a perfect gas at 127000 Pa and 235 K.
 - (a) What is the volume of the gas?
 - (b) Write the expression for the total differential 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 decrease of 1% (ii) a volume decrease of 7%, (iii) an increase in the number of moles by 4%.
 - (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.