



Gas Models – Supplemental Worksheet

1. Calculate the pressure exerted by 0.4891 mol of N_2 in a 1.0000 L container at 27.0°C. (Find a van der Waals constants table).
 - A. Use the ideal gas law.
 - B. Use the van der Waals equation.
 - C. Compare the results from a and b.

2. From the van der Waals constant a for the gases H_2 , CO_2 , N_2 , and CH_4 , predict which molecule shows the strongest intermolecular attractions.

3. Calculate the temperature of a container with 10.76 atm pressure exerted by 1.502 mol of CO_2 in a 3.5000 L.

4. A sample of 7.50 kg gaseous oxygen fills a 100 L flask at 289°C. What is the pressure of the gas, calculated from the van der Waals equation of state?