1. What (2) assumption in the ideal gas law (and molecular-kinetic theory) are reasonably valid at STP but fail for higher pressures. Explain.

2. The van der Waals equation predicts that:
   (a) The effect of the increase in volume of gas atoms leads to the overall volume to: 
       (I)ncrease, (D)ecrease or (S)tay the same? (a) __________
   (b) The effect of the increase in IMF’s causes the overall volume to: 
       (I)ncrease, (D)ecrease or (S)tay the same? (b) __________
   (c) At intermediate pressures the two corrections to the Ideal Gas law tend to cancel out, but at high pressures (> 350 atm) the overall volume will (I)ncrease, (D)ecrease, or (S)tay the same compared the the result predicted by the Ideal Gas Law. (c) __________

3. Given 45.0 g of NH₃ gas in a 1.00 L container at 100.°C:
   (a) What is the pressure (in atm) in the container according to the ideal gas law? (a) __________
   (b) What is the pressure (in atm) in the container according to the van der Waals equation? (Given: a = 4.17(L²·atm)/mol², and b = 0.0371 L/mol) (b) __________