Advanced Chemistry **NAME: _____PER: _____**
Van der Waals WS

Instructions: Complete the following problems. SHOW ALL WORK in the empty space below the questions. Remembers the units. Round to the correct number of significant figures. Use the table from the lesson to find your "a" and "b" values for each gas.

Ideal-Gas Law Deviation Concepts

1. When does a gas deviate a lot from the ideal-gas law?

2. When does a gas deviate little from the ideal-gas law?

3. Under which condition do you expect Ne to deviate the least from ideal behavior?
   a) 2 atm at 5000 K
   b) 4 atm at 3000 K
   c) 6 atm at 5000 K
   d) 8 atm at 298 K

Van der Waals Equation/Ideal Gas Law

4. Calculate the pressure exerted by 1.00 mol H_2O confined to a volume of 5.00 L at 25.00ºC.
   a) First use the ideal-gas equation

   b) Use the van der Waals equation

5. Calculate the pressure that CCl_4 will exert at 75.50ºC if 1.000 mol occupies 33.30 L.
   a) First use the ideal-gas equation

   b) Use the van der Waals equation

6. Calculate the pressure that krypton will exert at 165.4ºC if 1.000 mol occupies 6.440 L.
   a) First use the ideal-gas equation

   b) Use the van der Waals equation