**Chemistry Gas Quiz Redo**

**(you’re welcome)**

Please show all of your work and UNITS. Please draw a box around your final answer. There will be no phoning a friend. You may use a calculator (not on your phone), periodic table of elements, Common ions sheet and your own notecard. When you have completed your exam you are to attach your personnel notecard to the back. Place the exam in the appropriate tray. When applicable please give all answers in hundredths. Remember, 1 atmosphere equals 101.325 kPa and liquid oxygen is blue. The same rules really apply here. Can I control what you do at home? No. Can I tell you that I trust you to do the honest thing and complete this with limited resources? Yes. Please let your conscience speak to you.

1. A sample of oxygen gas has a volume of 150 mL when its pressure is 0.923 atm. If the pressure is increased to 0.987 atm and the temperature remains constant, what will the new volume be?

2. What is the pressure exerted by a 0.500 mol sample of nitrogen in a 10.0 L container at 20°C?

3. How many liters of NH3,are produced, according to the equation below, when given 5.8 mol of N2? Assume temperature and pressure remain constant. The equation is unbalanced!!!!! For real this time!!!!!

N2(*g*) + H2(*g*) → NH3(*g*)

4. A balloon filled with helium gas has a volume of 650 mL at a pressure of 1.5 atm. The balloon is released and reaches an altitude of 6.7 km, where the pressure is 0.57 atm. If the temperature has remained the same, what volume does the gas occupy at this height?

5. Nitric acid can be produced by the reaction of gaseous nitrogen dioxide with water, according to the following balanced chemical equation.

3NO2(g) + H2O(l) ⎯→ 2HNO3(l) + NO(g)

If 745 L of NO2 gas react with water, what volume of NO gas will be produced? Assume the gages are measured under the same conditions before and after the reaction.

6. What is the pressure in atmospheres exerted by a 0.500 mol sample of nitrogen gas in a 10.0 L container at 25° C?

7. Compare the rates of effusion of Helium and Neon at the same temperature and pressure. What is the rate of effusion?

8. Calculate the volume, in liters, occupied by each of the following:

A. 2.00mol H2 at 27°C and 3.45 atm

B. 0.576 mol HN3 at 37° C and 0.729 atm

C. 7.4 g O2 at 57° C and 0.888atm

**Bonus**

1. Please explain, in detail, SOMETHING you have learned from this class this year. Just. One. Thing. In. Detail. You can do it.

2. What are girls that you find attractive made of? Hint. It involves what two elements?