**CW 3 – Particles, Volume of a Gas, and the Mole**

**Name:**

**Period: 2 3 4**

Directions: Solve the following problems using dimensional analysis. You can also use your mole map if needed. **Want full credit?** **Show your work and make sure your answers are in correct significant figures and have units**!

Particles and the Mole

1. How many atoms of gold are in 1.00 moles?
2. How many moles are in 5.50 x 1022 molecules of H2O?
3. How many formula units are in 0.8700 moles of Na2CO3?
4. How many moles are in 7.75 x 1025 formula units of H2SO3?
5. How many molecules are in 2.050 moles of N2O?
6. How many moles are in 70 000. atoms of aluminum?

Molar Volume Problems

1. What is the volume, in L, of 2.06 mol of O2 gas at STP?
2. How many moles are in 99.99 L of CO2 gas at STP?
3. What is the volume, in L, of 0.888 mol of N2O gas at STP?
4. How many moles are in 432.34 mL of H2O gas at STP?
5. What is the volume, in L, of 0.7777 moles of O3 (ozone) gas at STP?
6. How many moles are in 55.555 mL of steam at STP?