Moles Conversion Calculation WS name:

1. Would 1 mole of feathers weight the same as 1 mole of bowling balls? Yes or No
2. Would 1 dozen feathers weight the same as 1 dozen bowling balls? Yes or No
3. How many **Moles** are in the following quantities of mass? Make sure to use the correct units and SIG FIGS.
4. 12.7 grams of Strontium
5. 17.23 grams of Neon
6. 82.53 grams of Calcium Oxide
7. How many grams are in the following quantities of moles? Make sure to use the correct unit.
8. 17 moles of Lithium Phosphate
9. 3 moles of Bi
10. 7.3 moles of Al2O3
11. Calculate the following to solve for **moles or representative particles**(RP). Make sure you use the correct units (especially for RP using either atoms, ions, molecules, or formula units). Also show your work using dimensional analysis, correct sig figs and scientific notation.
12. 15 moles of solid potassium
13. 5.356 x 1025 molecules of SiO2
14. 2.3 moles of Barium ions
15. 17.23 x 1012 formula units of NaCl
16. How is density related to the volume/mole conversion factor and molar mass? Respond using a sentence and an explanation with conversion factors.
17. For each of the following questions solve using the volume ratio conversion factor or the mole hole chart.
    1. How many liters of gas are there in 13.5 moles of CO2?
    2. How many grams are there in 2.5 liters of Nitrogen?
    3. What is the molar mass of a gaseous compound that that has a density of 2.561g/L?
    4. Calculate the volume of the liquid and gas state of Bromine if you have 2 moles of both.
18. Compare and contrast what conversion factors you would need to calculate the volume of a liquid vs. a volume of a gas.