**Mole Practice KEY**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

The only known picture of Amedeo Avogadro

Avogadro’s Number (6.02 x 1023) was not discovered by him, but named in honor of him. It was Dr. Avogadro’s original hypothesis about the volume of gas molecules that led to the development of the mole concept many years later.

**Use your newfound molar repertoire to complete the following problems:**

1. What is the mass of 5.7 L of NH3 (g) at STP?



1. How many molecules are in 75.0 g of diphosphorus pentoxide?



1. What is the mass of 2.5 moles of chlorine gas at STP?



1. What volume is occupied by 55 g of methane at STP?



1. How many atoms of neon gas would a container with a volume of 67.2 L hold at STP?



Q: What did Avogadro teach his students in math class?
A: Moletiplication!

Q: What do you get when you have a bunch of moles acting like idiots?
A: *A lot of Moleasses!*

1. One drop of water weighs 0.040 g. How many molecules are there in one drop?



1. Isopentyl acetate, C7H14O2, the compound responsible for the scent of bananas, can be produced commercially. Interestingly, some bees release about 1.0 ug of this compound when they sting. It is believed the resulting scent attracts other bees to join the attack. How many molecules of isopentyl acetate are released in a typical bee sting?



1. How many atoms are there in 303 g of potassium nitrate?



1. A silicon chip used in an integrated circuit of a microcomputer has a mass of 0.0060 g. How many silicon atoms are present in the chip?



Amedeo Avogadro Fun Facts!

* He was born in 1776; one month after the Declaration of Independence was signed.
* He received a degree in law at the age of 16.
* He had 6 children. (Yes, he was married, although his picture would make you think otherwise.)
* He was a chemistry professor at the University of Turin, which still exists in the city where the Winter Olympics were recently held.