

Mole HW #1 name: \_\_\_\_\_

1. Describe the relationship between Avogadro's number & 1 mole of any substance.

2. How many oxygen atoms are in a representative particle of each of these?

A. ammonium nitrate, a fertilizer -  $\text{NH}_4\text{NO}_3$  \_\_\_\_\_

B. acetylsalicylic acid, aspirin -  $\text{C}_8\text{H}_8\text{O}_4$  \_\_\_\_\_

C. ozone, a disinfectant and part of the air -  $\text{O}_3$  \_\_\_\_\_

D. nitroglycerine, explosive -  $\text{C}_3\text{H}_5(\text{NO}_3)_3$  \_\_\_\_\_

3. How many moles in each of these (show the math)?

A.  $1.50 \times 10^{23}$  molecules  $\text{NH}_3$  (ammonia)

B. 1 billion ( $1 \times 10^9$ ) molecules  $\text{O}_2$  (oxygen) (USE 3SF)

C.  $6.02 \times 10^{22}$  molecules of  $\text{Br}_2$  (bromine)

D.  $4.81 \times 10^{24}$  atoms of Li (lithium)