

**Chemistry – Chapter 10 Book problems #1 (summer school)**

1. How many moles is  $2.80 \times 10^{24}$  atoms of silicon?
2. How many moles is  $2.17 \times 10^{23}$  representative particles of bromine?
3. How many atoms are in 1.14 mol of sulfur trioxide ( $\text{SO}_3$ )?
4. How many carbon atoms are in 2.12 mol of propane ( $\text{C}_3\text{H}_8$ )?  
How many hydrogen atoms are in 2.12 mol of propane( $\text{C}_3\text{H}_8$ )?
5. How many moles is  $1.50 \times 10^{23}$  molecules of  $\text{NH}_3$ ?
6. How many atoms are in 1.75 mol of  $\text{CHCl}_3$ ?
7. What is the molar mass of  $\text{CaSO}_4$ ?
8. Find the mass, in grams, of  $4.52 \times 10^{-3}$  mol  $\text{C}_{20}\text{H}_{42}$
9. Calculate the mass, in grams, of 2.50 mol of iron (II) hydroxide.
10. Find the number of moles in  $3.70 \times 10^{-1}$  g of boron.
11. Calculate the number of moles in 75.0 g of dinitrogen trioxide.
12. How many grams are in 5.66 mol of  $\text{CaCO}_3$ ?
13. Three balloons filled with three different gaseous compounds each have a volume of 22.4 L at STP. Do these balloons have the same mass or contain the same number of molecules? Explain.