U3-LM1B-WS The Mole

1. The mole is _____**6.022 x 10^{23}**_____ units.
2. One mole of books is _____**6.022 x 10^{23} books**_____.
3. One mole of apples is _____**6.022 x 10^{23} apples**_____.
4. One mole of neon gas is __**6.022 x 10^{23} atoms of neon**___.
5. One mole of water is ____**6.022 x 10^{23} molecules of water**.
6. One mole of gold is ___**6.022 x 10^{23} atoms of gold**_____.
7. One mole of oxygen is ____**6.022 x 10^{23} atoms of oxygen**__.
8. One mole of potassium bromide (KBr) is **6.022 x 10^{23} molecules of KBr**

9. The atomic mass of carbon is approximately 12.0 amu. It represents the mass of **1 mole of** carbon atom(s).

10. If we express the atomic mass of one mole of carbon in grams, it will represent the mass of __**6.022 x 10^{23}**__ atoms of carbon and will be referred to as the __**molar mass**_____ of carbon.

11. The formula weight of methane, CH_4, is about 16.0 amu. It represents the mass of one __**molecule**_____of methane. If we express the formula weight of methane in grams, it will represent the mass of _____**one mole**_____of methane. This is the ____**molar mass**_____ of methane.

12. One mole of laughing gas, N_2O consists of __**1.2044 x 10^{24}**_____ atoms of nitrogen and _____**6.022 x 10^{23}**_____atoms of oxygen.

13. Given a beaker containing 42.9 moles of octane, C_8H_{18}, determine:

    a. The number of moles of C in the sample **343 moles**

    b. The number of atoms of C in the sample **2.07 x 10^{26} moles**

    c. The number of moles of H in the sample **772 moles**

    d. The number of atoms of H in the sample. **4.65 x 10^{26} moles**