MOLE DRILL SHEET

1. Determine the mass of the following:

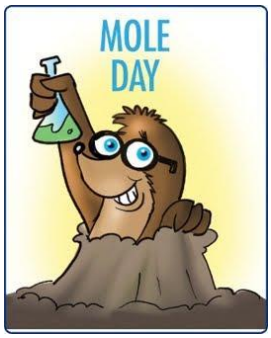
(a) 1.0 mol of Na.
(b) 3.0 mol of Na.
(c) 0.03 mol of Na.
(d) 4.0 mol of Cr
(e) 1.0 mol of H_2
(f) 1.2 mol of Te
(g) 0.11 mol of S
(h) 0.25 mol of C
(i) 4.8 mol of CH_4
(j) 2.0 mol of CH_3COOH
(k) 2.0 mol of $(NH_4)_2SO_4$
(l) 3.0 mol of $BeSO_4.4H_2O$
(m) 0.12 mol of C_6H_6
(n) 2.0 mol of $CuSO_4$

2. **Determine the number of moles in each of the following:**

(a) 708 g of Cl_2
(b) 699 of Li
(c) 1.26g of I_2
(d) 1.4g of N_2
(e) 23g of N_2
(f) 9.0 g of Be
(g) 1.0g of H_2
(h) 4.7g of BeF_2
(i) 0.344g of $Cr_2(SO_3)_3$
(j) 2.15g of $Cu(C_2H_3O_2)_2$
(k) 110g of P_2S_3
(l) 1.23g of TiF_4
(m) 2.698g of Al
(n) 224g of Zn_3N_2

3. **Determine the number of particles in each case:**

(a) Neon atoms in 1.0 mol of Neon atoms.
(b) Oxygen molecules in 1.0 mole of oxygen molecules (O_2)
(c) Oxygen atoms in 1.0 mole of oxygen atoms.
(d) Oxygen atoms in 1.0 mole of oxygen molecules.
(e) Molecules of $CuSO_4$ in 2.0 mol of $CuSO_4$
(f) Atoms of Cu in 2.0 mol of $CuSO_4$
(g) Atoms of S in 2.0 mol of $CuSO_4$
(h) Atoms of oxygen in 2.0 mol of $CuSO_4$
(i) Moles of atoms in 2.0 mol of $CuSO_4$



4. Determine the number of moles in each of the following:

(a) 12.04×10^{23} atoms of Zn
(b) 3.02×10^{20} atoms of Cu
(c) 2.01×10^{24} atoms of Pb
(d) 1.80×10^{25} chemistry teachers
(e) 1.0×10^{22} molecules of NO_2
(f) 1.50×10^{25} molecules of H_2SO_4
(g) 300 molecules of water
(h) 9.03×10^{25} molecules in $Al_2(SO_4)_3$

5. **Determine the mass of the following:**

(a) 3.01×10^{24} atoms of Fe
(b) 6.02×10^{22} atoms of Ba
(c) 2.5×10^{26} atoms of Al
(d) 1 atom of S
(e) 12.01×10^{23} molecules of CO_2
(f) 50 molecules of water
(g) 3.01×10^{22} molecules of $Al_2(SO_4)_3$

6. **Calculate the following:**

(a) The number of atoms in 31.0g of P.
(b) The number of atoms in 72.0g of C.
(c) The number of atoms in 9.0g of Al.
(d) The number of atoms in 1.0g of Cu.
(e) The number of molecules in 18.0g of H_2O.
(f) The number of molecules in 4.9g of H_2SO_4.
(g) The number of molecules in 1.0g of $Al(NO_3)_3$.
(h) The number of oxygen atoms in 9.8g of H_2SO_4.
(i) The number of oxygen atoms in $Ca_3(PO_4)_2$.