We have studied two mole equalities. They are:

1 mol = 6.02 x 10^{23} particles

1 mol = g-formula-mass (periodic table)

Each equality can be written as a set of two conversion factors. They are:

$$\left(\frac{1\ mole}{6.02x10^{23}\ particles}\right) \qquad \left(\frac{6.02x10^{23}\ particles}{1\ mole}\right)$$

$$\left(\frac{1\ mole}{g-formula-mass}\right) \qquad \left(\frac{g-formula-mass}{1\ mole}\right)$$

Mole-Particle Conversions

1. How many moles of magnesium are in 3.01 x 10^{22} atoms of magnesium? **Answer ----- .05 moles**

2. How many molecules are there in 4.00 moles of glucose, $C_6H_{12}O_6$? **Answer: 2.4 x 10^{24} molecules**

3. How many moles are 1.20 x 10^{25} atoms of phosphorous? An**swer: 19.9 moles**

4. How many atoms are in 0.750 moles of zinc? **Answer: 4.5 x 10^{23} atoms**

5. How many molecules are in 0.400 moles of N_2O_5? **Answer: 2.4 x 10^{23} molecules**