CHEQ 1094 **MOLES**

1. Calculate the number of moles in
   (a) 3.00×10^{23} atoms of Mg
   (b) 8.72×10^{15} molecules of CO_2
   (c) 5.0×10^{24} formula units of NaCl
   (d) 15.0 g of Na_2CO_3
   (e) 38.4 g of $NiCl_2 \cdot 6H_2O$
   (f) 2.45 mg of Si

2. What is the mass of
   (a) 2.50 moles of aluminum
   (b) 0.500 mole of $CaCO_3$
   (c) 6.47×10^{-2} mole N_2O_3
   (d) 8.8×10^{-5} mole of hydrogen gas
   (e) 1.15×10^{20} formula units of $LiNO_3$
   (f) 6.02×10^{30} atoms of mercury
   (g) 1.0×10^{10} molecules of ICl_5

3. A chemist wishes to carry out a chemical reaction in which KBr and $AgNO_3$ are used.
   (a) Calculate the molar mass of each of these substances.
   (b) What mass of each would be required if the chemist wanted to use 2.00×10^{-2} mole of each compound?

4. Calculate the
   (a) number of atoms in 2.56 moles of P_4
   (b) number of chloride ions in 55.0 g of $CaCl_2$
   (c) moles of oxygen atoms in 22.5 g of $Al(NO_3)_3$
   (d) mass of Na_2SO_4 that contains 0.035 mole of Na^+
   (e) mass of $Al(NO_3)_3$ that contains 8.6×10^{28} NO_3^- ions