Basic Atomic Structure Worksheet

1. The 3 particles of the atom are:
   a. proton
   b. electrons
   c. neutrons

   Their respective charges are:
   a. positive
   b. negative
   c. neutral, none
2. The number of protons in one atom of an element determines the atom's identity, and the number of electrons determines the charge of the element.
3. The atomic number tells you the number of protons in one atom of an element. It also tells you the number of electrons in a neutral atom of that element. The atomic number gives the "identity" of an element as well as its location on the periodic table. No two different elements will have the same atomic number.
4. The atomic mass of an element is the average mass of an element's naturally occurring atom, or isotopes, taking into account the mass of each isotope.
5. The atomic mass of an element is the total number of protons and neutrons in the nucleus of the atom.
6. The mass number is used to calculate the number of neutrons in one atom of an element. In order to calculate the number of neutrons you must subtract the atomic number from the atomic mass.
7. Give the symbol of and the number of protons in one atom of:

   Lithium Li 3
   Iron Fe 26
   Oxygen O 8
   Krypton Kr 36
   Bromine Br 35
   Copper Cu 29
   Mercury Hg 80
   Helium He 2
8. Give the symbol of and the number of electrons in a neutral atom of:

   Uranium U 92
   Boron B 5
   Chlorine Cl 17
   Iodine I 53
   Xenon Xe 54
9. Give the symbol of and the number of neutrons in one atom of:

   (Mass numbers are ALWAYS whole numbers...show your calculations)

   Barium Ba: 137-56=81
   Carbon C: 14-7 = 7
   Fluorine F: 19-9 = 10
   Europium Eu: 152-63=89
   Bismuth Bi: 209-83=126
   Hydrogen H: 1-1=0
   Magnesium Mg: 24-12= 12
   Mercury Hg: 201-80=121