

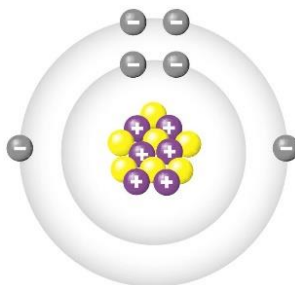
## The Atom

Particle	Location in Atom	Electric Charge	Relative Mass	Symbol
Electron				
Proton				
Neutron				

### Definitions:

1. Atomic mass
2. Atomic number
3. Isotope

Use the diagram of an atom to answer the following questions:



1. Label the parts of the atom. Include the following labels: proton, electron, neutron, energy shell, nucleus.
2. What element is represented by this diagram? How do you know?
3. What is the electric charge of this nucleus? What is the electric charge of this atom?
4. What is the mass of this atom? Does the mass number match the atomic mass on the periodic table? If not, why not?

5. How could you figure out how many neutrons are in a particular atom if you only know the atomic number and the atomic mass?
6. Using a periodic table, look up titanium.  
(a) What is its atomic number?  
(b) How many protons does a titanium atom have?  
(c) How many electrons does it have?
7. Define isotope:
8. Give the atomic mass of each of the following atoms:  
(a) beryllium with 5 neutrons  
(b) titanium with 26 neutrons  
(c) gallium with 39 neutrons  
(d) iron with 30 neutrons
9. Calcium-40 has \_\_\_\_protons, \_\_\_\_neutrons, and \_\_\_\_electrons  
Tin -119 has \_\_\_\_protons, \_\_\_\_neutrons, and \_\_\_\_electrons  
Carbon-13 has \_\_\_\_protons, \_\_\_\_neutrons, and \_\_\_\_electrons
10. An element has 8 protons and 9 neutrons.  
(a) what element is it? \_\_\_\_\_  
(b) How many electrons are in the valence shell of this atom? \_\_\_\_\_  
(c) What is its atomic mass?\_\_\_\_\_
11. An element has 36 electrons and 46 neutrons.  
(a) what element is it? \_\_\_\_\_  
(b) How many protons are in on atom of this atom? \_\_\_\_\_  
(c) What is its atomic mass?\_\_\_\_\_