

## Isotopes & Ions Worksheet

Answer the following questions below using your notes or your book.

1. What is an isotope?
2. How do atoms become isotopes?
3. What is an ion?
4. How do atoms become cations and anions?

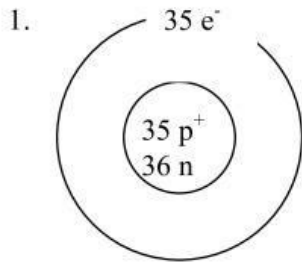
For the questions below determine if the particle that is described in an atom or an ion. In the space that says, "charge", write either "positive", "negative", or "no charge". Then indicate whether the particle is an "atom" or an "ion".

5. A particle of oxygen that contains 8 protons and 8 electrons.  
Charge \_\_\_\_\_  
Is this an atom or an ion? \_\_\_\_\_
6. A particle of fluorine that contains 9 protons and 10 electrons.  
Charge \_\_\_\_\_  
Is this an atom or an ion? \_\_\_\_\_
7. A particle of calcium that contains 20 protons and 18 electrons.  
Charge \_\_\_\_\_  
Is this an atom or an ion? \_\_\_\_\_
8. A particle of uranium that contains 92 protons and 88 electrons.  
Charge \_\_\_\_\_  
Is this an atom or an ion? \_\_\_\_\_

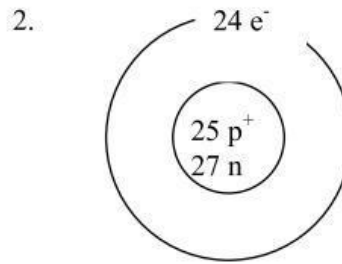
For each of the questions below fill in the atomic number, mass number, and write the proper name (e.g. hydrogen-2) for each isotope.

9. Carbon (6 protons, 8 neutrons)  
Atomic number \_\_\_\_\_ Mass number \_\_\_\_\_ Name \_\_\_\_\_
10. Argon (18 protons, 22 neutrons)  
Atomic number \_\_\_\_\_ Mass number \_\_\_\_\_ Name \_\_\_\_\_
11. Silver (47 protons, 61 neutrons)  
Atomic number \_\_\_\_\_ Mass number \_\_\_\_\_ Name \_\_\_\_\_
12. Protactinium (91 protons, 142 neutrons)  
Atomic number \_\_\_\_\_ Mass number \_\_\_\_\_ Name \_\_\_\_\_

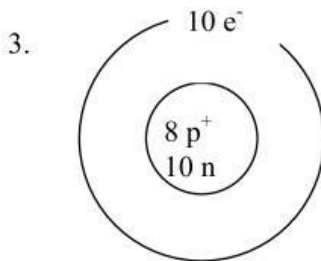
## Ion Practice



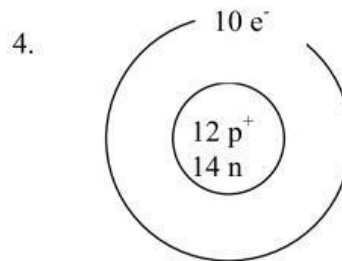
Element Name: \_\_\_\_\_  
Symbol w/ mass and  
atomic numbers: \_\_\_\_\_  
Electrical Charge: \_\_\_\_\_  
Ion: \_\_\_\_\_



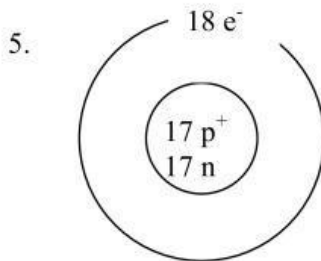
Element Name: \_\_\_\_\_  
Symbol w/ mass and  
atomic numbers: \_\_\_\_\_  
Electrical Charge: \_\_\_\_\_  
Ion: \_\_\_\_\_



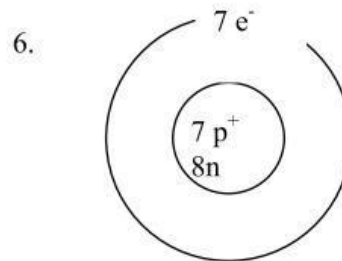
Element Name: \_\_\_\_\_  
Symbol w/ mass and  
atomic numbers: \_\_\_\_\_  
Electrical Charge: \_\_\_\_\_  
Ion: \_\_\_\_\_



Element Name: \_\_\_\_\_  
Symbol w/ mass and  
atomic numbers: \_\_\_\_\_  
Electrical Charge: \_\_\_\_\_  
Ion: \_\_\_\_\_



Element Name: \_\_\_\_\_  
Symbol w/ mass and  
atomic numbers: \_\_\_\_\_  
Electrical Charge: \_\_\_\_\_  
Ion: \_\_\_\_\_



Element Name: \_\_\_\_\_  
Symbol w/ mass and  
atomic numbers: \_\_\_\_\_  
Electrical Charge: \_\_\_\_\_  
Ion: \_\_\_\_\_