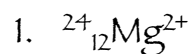


# Ions & Isotopes

## IONS

- An ion is \_\_\_\_\_
- Atoms become charged by \_\_\_\_\_ or \_\_\_\_\_ electrons.  
(Protons never move!!)
- Gain electrons → \_\_\_\_\_ ion (\_\_\_\_\_). Has more electrons than protons.
- Lost electrons → \_\_\_\_\_ ion (\_\_\_\_\_). Has more protons than electrons.
- The number of electrons an atom gains or loses indicates the charge.

## Example



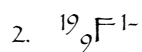
Atomic number = \_\_\_\_\_

Mass number = \_\_\_\_\_

Number protons = \_\_\_\_\_

Number electrons = \_\_\_\_\_

Number neutrons = \_\_\_\_\_



Atomic number = \_\_\_\_\_

Mass number = \_\_\_\_\_

Number protons = \_\_\_\_\_

Number electrons = \_\_\_\_\_

Number neutrons = \_\_\_\_\_

## Try these:

Name of Element	Symbol	Atomic #	Mass #	# Protons	# Electrons	# Neutrons
oxygen		8			10	8
	$\text{Al}^{+3}$			13		
		3	7		2	
	$\text{Br}^{-1}$					45

## ISOTOPES

- An isotope is \_\_\_\_\_
- Isotopes have the same \_\_\_\_\_, therefore the same number of \_\_\_\_\_, but have have a different number of \_\_\_\_\_.  
Therefore isotopes have a different \_\_\_\_\_!
- Isotopes of an element have different \_\_\_\_\_  
\_\_\_\_\_ than their standard counterpart.
- “Light” isotopes have \_\_\_\_\_ (lower mass).
- “Heavy” isotopes have \_\_\_\_\_ (more mass).

Why is this important?

The atomic mass found on the periodic table is actually a “weighted average” of all isotopes of that element.

### Example



Atomic number = \_\_\_\_\_

Mass number = \_\_\_\_\_

Number protons = \_\_\_\_\_

Number electrons = \_\_\_\_\_

Number neutrons = \_\_\_\_\_



Atomic number = \_\_\_\_\_

Mass number = \_\_\_\_\_

Number protons = \_\_\_\_\_

Number electrons = \_\_\_\_\_

Number neutrons = \_\_\_\_\_

### Try these:

Name of Element	Isotope	Atomic #	Mass #	# Protons	# Electrons	# Neutrons
	$^3_1\text{H}$					
	—__ U		240		92	
	$^{25}_{12}\text{Mg}$					
	$^{37}_{17}\text{Cl}$					