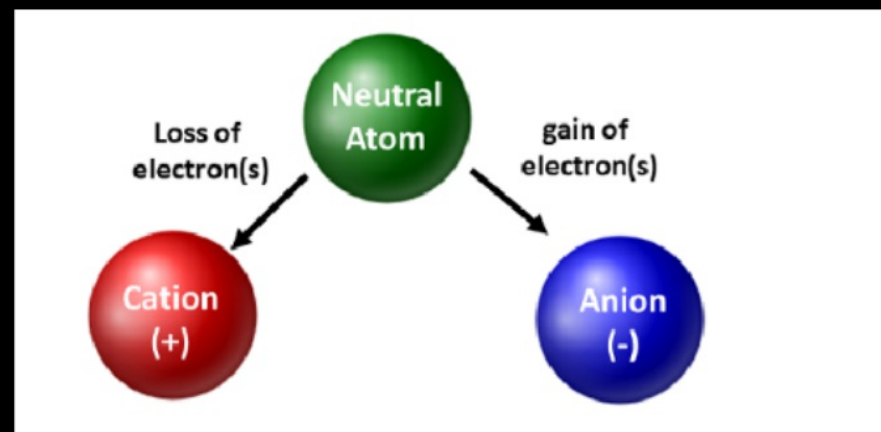


2.25.20

Atomic Structure: Ions

Today's Objectives:

- Draw the Bohr atom for ions
- Use the PT as a shortcut to solve for ions formed



How many valence electrons does each of these have?

hint: use the PT shortcut (°٥°)

Mg 2

#19 1

I 7

#5 3

Kr 8

↪ #2 2
(Even though it lives
in Group 8.)

* Octet Rule: Atoms want to set
valence electrons.

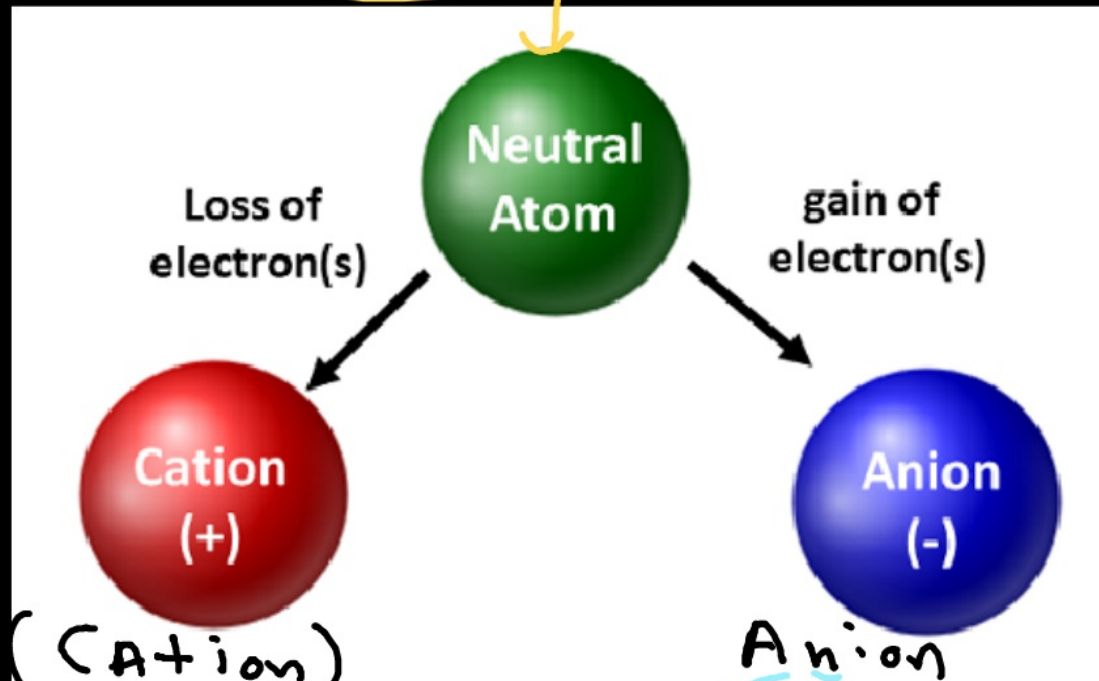
8



- Important for bonding.
- Atoms can gain or lose electrons to get a full octet.

Ions - atoms that have gained or lost valence electrons .

Protons Electrons
Has $+$ $=$ $-$

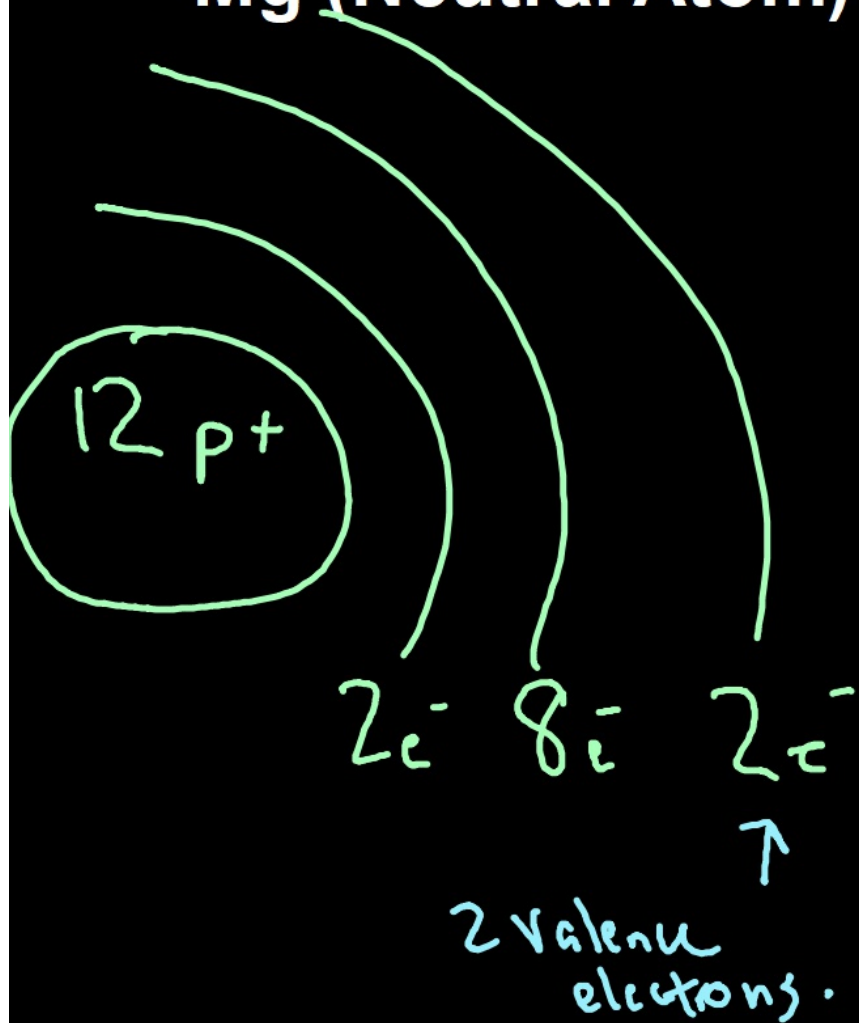


(Cation)

Anion
N = negative

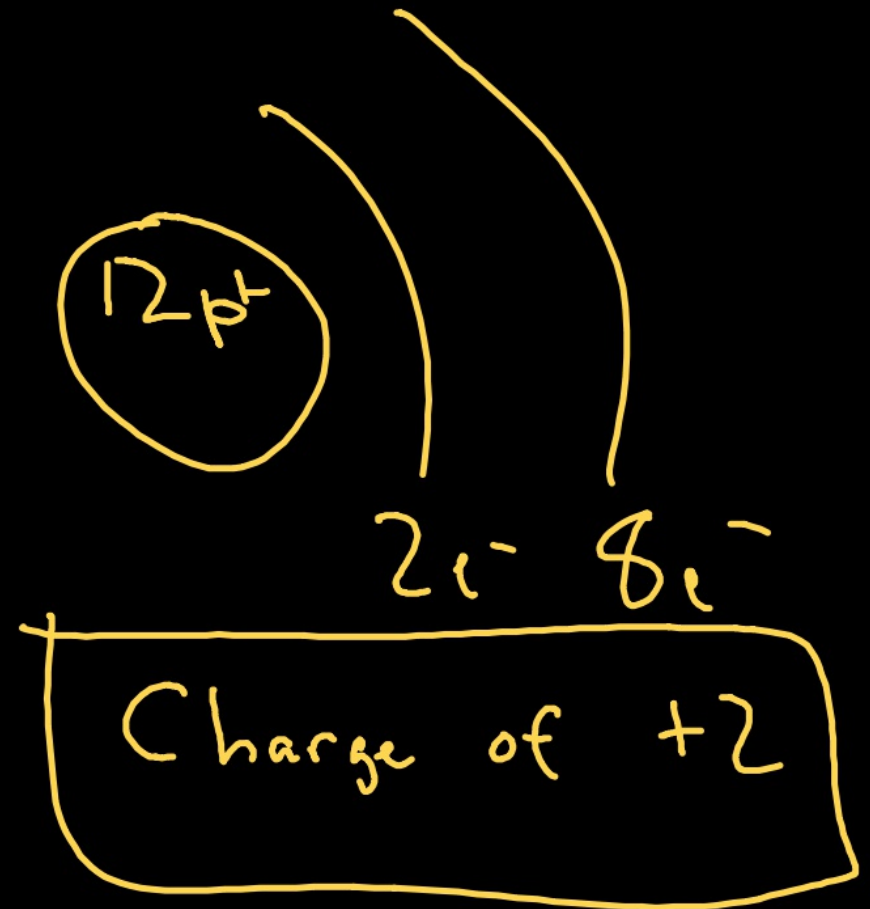


Mg (Neutral Atom)



→
Lose
2
electrons

Mg (Ion)



PT Shortcut - Ions Formed

Noble
Gases -
Don't form
ions

1	2									3	4	5	6	7	8
1 +1										-5	-4	-3	-2	-1	0
2 +1	+2									+3	-4	-3	-2	-1	0
3 +1	+2									+3	+4	-3	-2	-1	0
4 +1	+2									+3	+4	+5	-2	-1	0
5 +1	+2									+3	+4	+5	+6	-1	0
6 +1	+2									+3	+4	+5	+6	-1	0
7 +1	+2														

Build an Atom Game (10 pts)

- 1. go to phet.colorado.edu, simulations, chemistry**
- 2. "build an atom", Game tab at the bottom**

Particle Color Code

Orange = Proton

Gray = Neutron

Blue = Electron