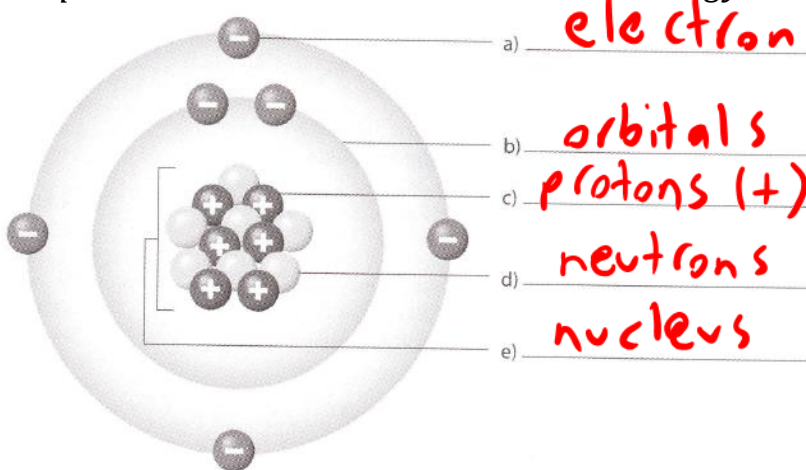


# ATOMIC STRUCTURE

1. Use the vocabulary terms that follow to label the parts of an atom. Place the correct term on the line next to each part of the atom. You will not need to use all the terms.

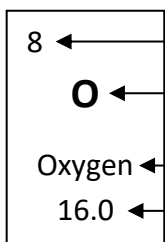
nucleus      proton      neutron      electron      energy level (orbit)



2. Complete the following table describing the three subatomic particles.

	Symbol	Overall Charge	Atomic Weight (u)	Location in Atom
<b>Proton</b>	p <sup>+</sup>	+1	1 a.m.u	nucleus
<b>Neutron</b>	n <sup>0</sup>	0	1 a.m.u	nucleus
<b>Electron</b>	e <sup>-</sup>	-1	1/1840 a.m.u	outside of the nucleus

3. Label the information provided in the periodic table.



atomic # → # of protons

Symbol element

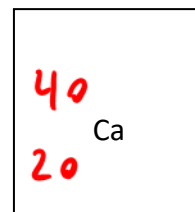
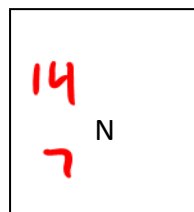
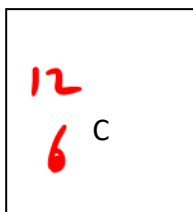
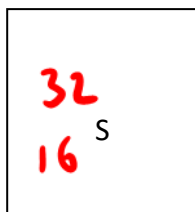
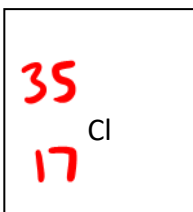
atomic mass

mass # → A

atomic # → Z

X  
symbol

4. Standard Atomic Notation



5. What does the **atomic number** represent?

# of protons or # of electrons

6. What does the atomic mass represent?

# of protons + # of neutrons

atomic mass = # protons + # neutrons

7. How would you figure the number of protons or electrons in an atom?

atomic number

8. How would you figure the number of neutrons in an atom?

# neutrons = atomic mass - # protons

9. Each energy level has a limit on the number of electrons it can fit:

1<sup>st</sup> orbit = 2 e<sup>-</sup>

2<sup>nd</sup> orbit = 8 e<sup>-</sup>

3<sup>rd</sup> orbit = 8 e<sup>-</sup>

4<sup>th</sup> orbit = 18 e<sup>-</sup>

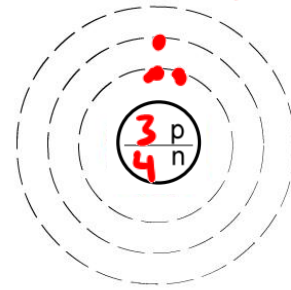
10. Draw the Bohr-Rutherford diagrams for the following:

2, 8, 8, 18, 18, 36

3  
Li  
Lithium  
7

7  
Li  
3

P+: 3  
E-: 3  
N<sup>0</sup>: 4

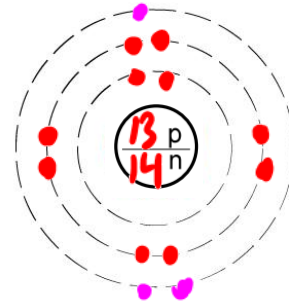


7 - 3 =

13  
Al  
Aluminum  
27

27  
Al  
13

P+: 13  
E-: 13  
N<sup>0</sup>: 14

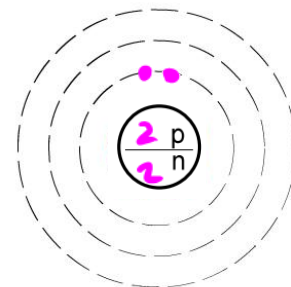


27 - 13 = 14

2  
He  
Helium  
4

4  
He  
2

P+: 2  
E-: 2  
N<sup>0</sup>: 2



12  
Mg  
Magnesium  
24

24  
Mg  
12

P+: 12  
E-: 12  
N<sup>0</sup>: 12

