Warm Up

0:05:00

TG How many protons does chlorine have? 17

'G Which element has mass number 51? V (Vanadium)

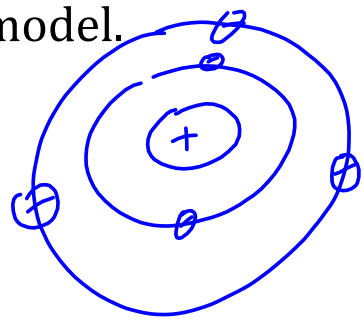
,G How many neutrons does fluorine have? 10

19 - 9

ИG Who proposed the nuclear model of the atom? Rutherford

иG Who discovered the electron? Thompson

G Draw a picture of Bohr's atom model.



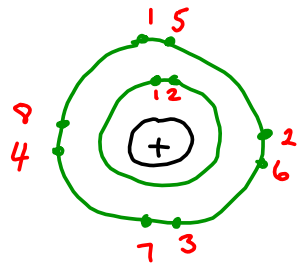
Bohr Diagrams

- Electrons move around the nucleus in orbits (energy levels, shells)

- The maximum number of electrons in the first three orbits is 2, 8, 8

- The first half of the electrons in any shell are placed at the N-E-S-W points of the diagram. The other half are placed in pairs starting at N.

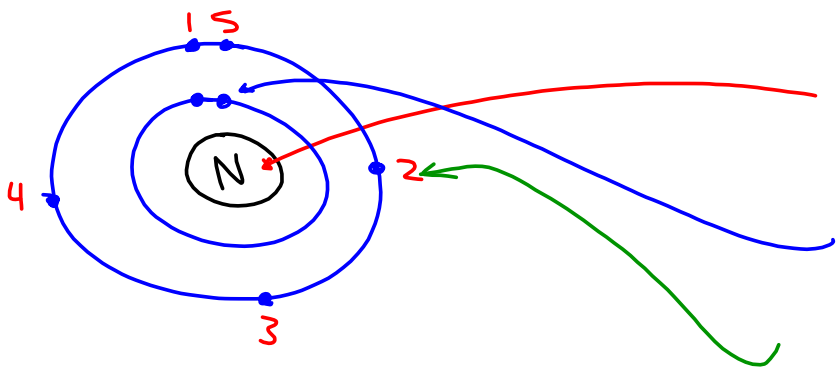
- If there are more than 18 electrons place them in the fourth orbit.



The 3rd orbit fills up in the same way as the 2nd.

1. Draw a Bohr diagram of a nitrogen atom.

Need chemical symbol and atomic # (# e^-)



In the "nucleus" we write the chemical symbol

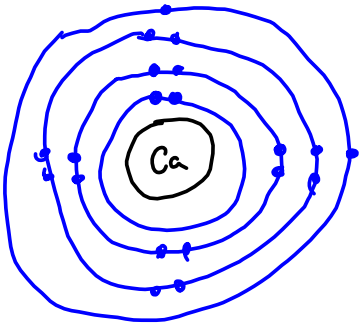
Nitrogen has 7e^-

2e^- go in the 1st orbit

The remaing 5 will fit in the 2nd orbit

2. Draw a Bohr diagram of a calcium atom.

Ca
20



Boron Potassium

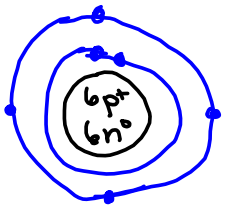
Bohr-Rutherford Diagrams

- The same as a Bohr diagram but we write the number of protons and neutrons in the center of the diagram (represents the nucleus)

Need Atomic # (# e^-s, # p^+s)
Mass # for # n^0s

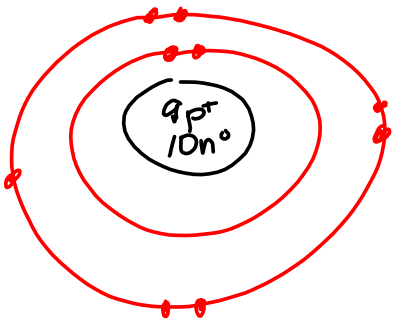
Ex. Carbon

$6 \Rightarrow e^-, p^+$
$12 - 6 = 6 \Rightarrow n^0$



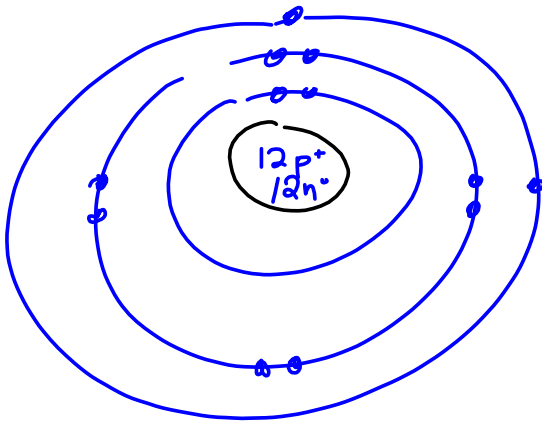
Fluorine

9, 19



Magnesium

12,24



Bohr diagram worksheet - complete the Bohr diagrams for the first 18 elements.

Look for any patterns as they may relate to the periodic table and the arrangement of the elements.