Name: Key

3.2 Notes
Science 9 – Wolfe, Spring 2020

Main ideas – fill in the blanks:

Atoms are the building blocks of matter, and atoms of different elements can be arranged into molecules. An atom is the smallest particle that displays the properties of an element.

Atoms consist of three particles: the proton, which has a charge of +1, and the neutron, which has a charge of 0, both live in the nucleus of the atom. Electrons, with a charge of -1, surround the nucleus.

Atoms are usually neutrally charged, but if they gain or lose electrons, they become charged particles called ions. If they lose electrons, their charge becomes positive and they are called cations. If they gain electrons, their charge becomes negative and they are called anions.

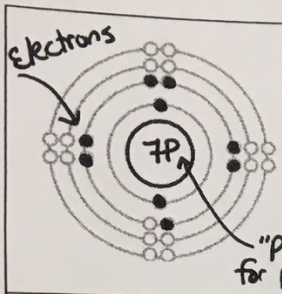
Electrons live in clouds around the nucleus that are specific distances from it and organized into shells ~~o~~ orbitals.

The atomic number of an element is the number of protons. The atomic mass is the number of protons and neutrons. The smallest particles, electrons, have almost no mass and so they don't count in the atomic mass. If atoms of the same element have different number of neutrons, we call them different isotopes of the element.

3.2 Worksheet

Name: Key

Complete the atoms with the number of protons, number of electrons, and the charge

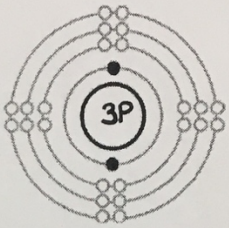


Charge

# of protons 7 (+7)

# of electrons 9 (-9)

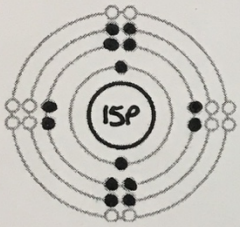
charge = -2 (+7 - 9)



# of protons 3

# of electrons 2

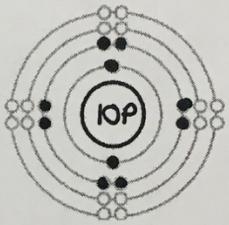
charge = +1



# of protons 15

# of electrons 14

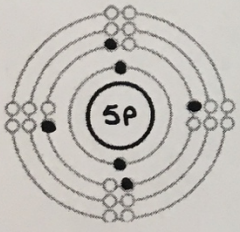
charge = +1



# of protons 10

# of electrons 10

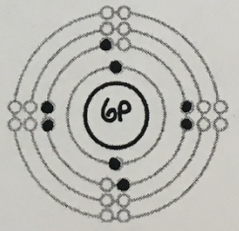
charge = 0



# of protons 5

# of electrons 6

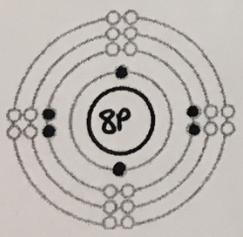
charge = -1



# of protons 6

# of electrons 8

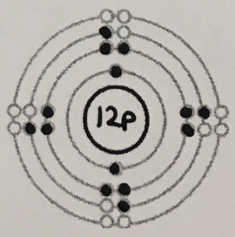
charge = -2



# of protons 8

# of electrons 6

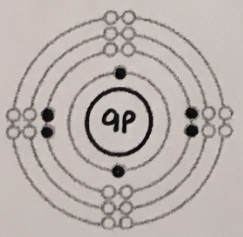
charge = +2



# of protons 12

# of electrons 14

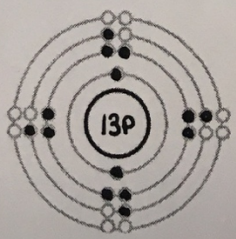
charge = -2



# of protons 9

# of electrons 6

charge = +3

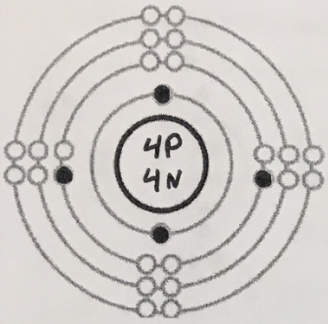


# of protons 13

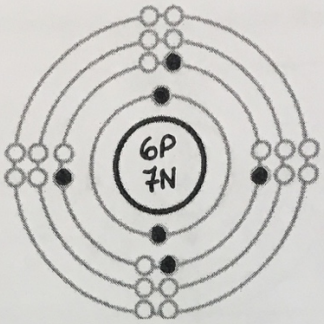
# of electrons 14

charge = -1

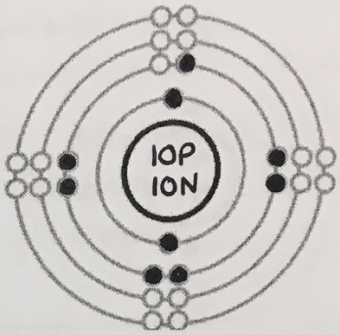
Complete the atoms with the number of subatomic particles, atomic mass, and atomic number.



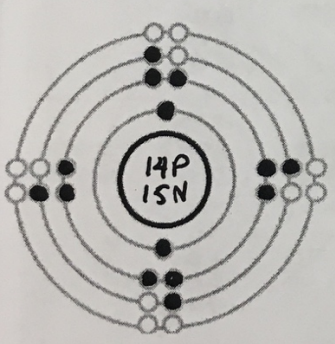
# of protons 4
# of neurons 4
# of electrons 4
Atomic number: 4
Atomic mass: 8



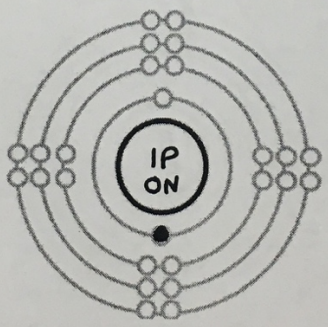
# of protons 6
# of neurons 7
# of electrons 6
Atomic number: 6
Atomic mass: 13



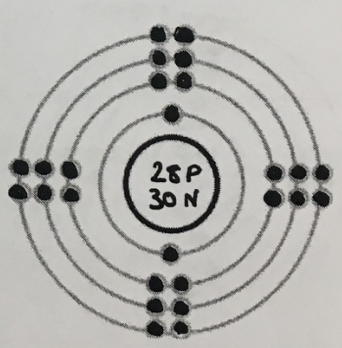
# of protons 10
# of neurons 10
# of electrons 9
Atomic number: 10
Atomic mass: 19



# of protons 14
# of neurons 15
# of electrons 14
Atomic number: 14
Atomic mass: 29



# of protons 1
# of neurons 0
# of electrons 1
Atomic number: 1
Atomic mass: 1



# of protons 28
# of neurons 30
# of electrons 26
Atomic number: 28
Atomic mass: 58