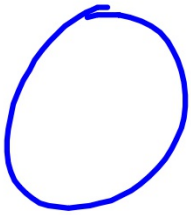
Sketch Helium atom



1. Helium:

a) atomic number: 2 $\#p^+$ 2 $\#e^-$ 2

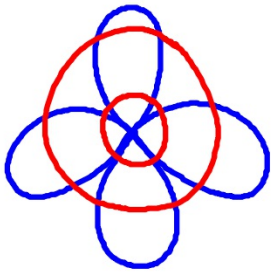
b) Write the electron configuration for helium.

$1s^2$

c) Complete the orbital diagram for helium. ↑↓ | | | | |

1s 2s $2p_x$ $2p_y$ $2p_z$

Sketch Carbon atom



2. Carbon:

a) atomic number: 6 $\#p^+$ 6 $\#e^-$ 6

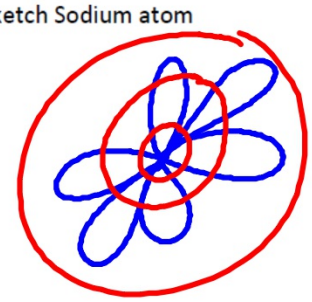
b) Write the electron configuration for carbon.

$1s^2\,2s^2\,2p^2$

c) Complete the orbital diagram for carbon. ↑↓ | ↑↓ | ↑ | ↑ |

1s 2s $2p_x$ $2p_y$ $2p_z$

Sketch Sodium atom



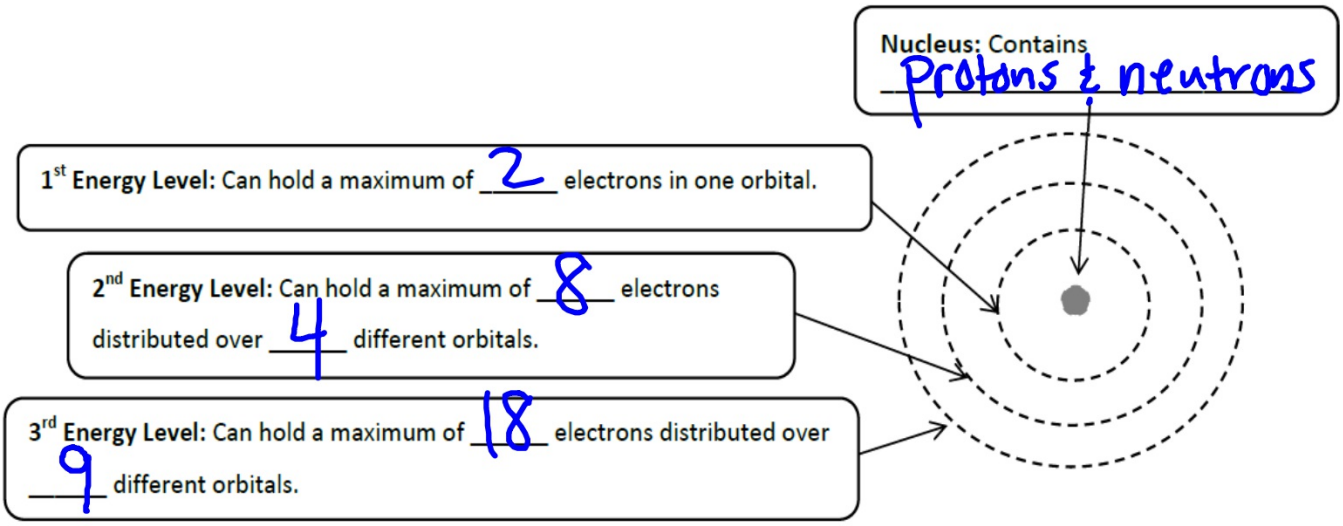
3. Sodium:

a) atomic number: 11 $\#p^+$ 11 $\#e^-$ 11

b) Write the electron configuration for sodium.

$1s^2 2s^2 2p^6 3s^1$

c) Complete the orbital diagram for sodium. ↑↓ | ↑↓ | ↑↓ | ↑↓ | ↑↓ | ↑

1s 2s $2p_x$ $2p_y$ $2p_z$ 3s

Conclusion: An orbital is the electron cloud shape. Each orbital can only hold 2 electrons. Every orbital has to be given 1 electron before one orbital shape can be given 2. The **s orbital** is a sphere that an hold 2 electrons. The **p orbital** is a dumbell that can hold a max of 2 electrons but it has 3 different shapes, Px, Py, & Pz on 3 different axis.