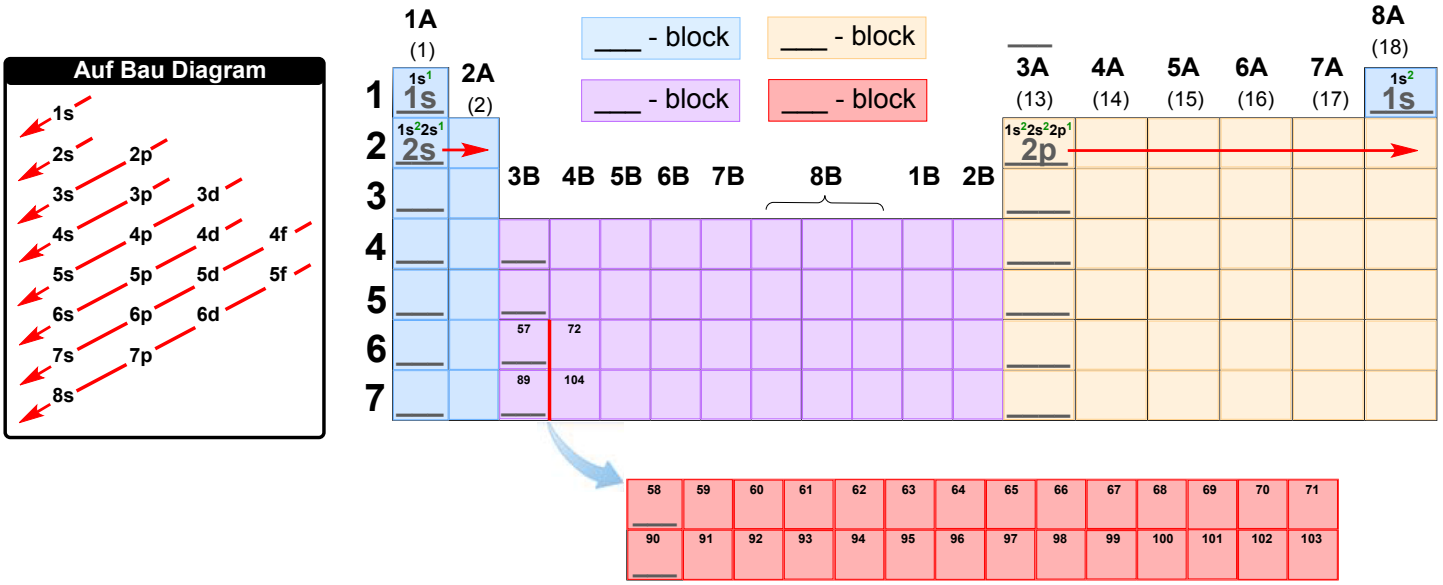
CONCEPT: THE ELECTRON CONFIGURATION REVIEW

Ground State Electron Configurations

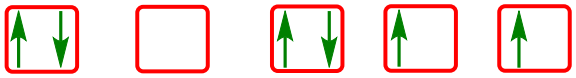
- Distributions of electrons (1s, 2s, 2p …) within orbitals using the *Auf Bau Principle*.
  - □ **Auf Bau Principle:** Starting from 1s, electrons fill _____ energy orbitals before moving to _____ energy orbitals.

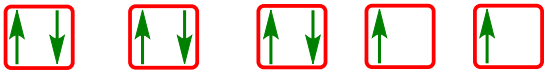


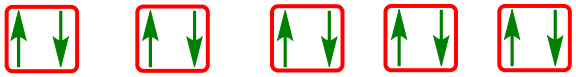
EXAMPLE: Write the ground state electron configuration for the following element: Fluorine (Z = 9)

PRACTICE: Which electron configuration represents a violation of the Auf Bau Principle?

a) 

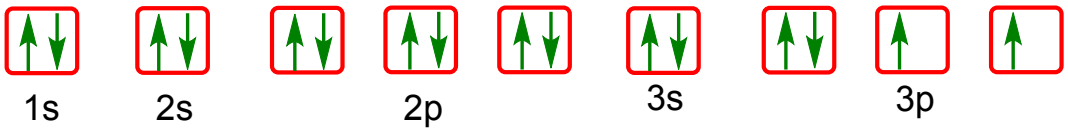
b) 

c) 

d) 

CONCEPT: THE ELECTRON CONFIGURATION REVIEW

PRACTICE: Identify the element with the given electron orbital diagram.



a) Silicon b) Fluorine c) Sulfur d) Chlorine e) Phosphorus

PRACTICE: Write the electron configuration and electron orbital diagram for the following element:

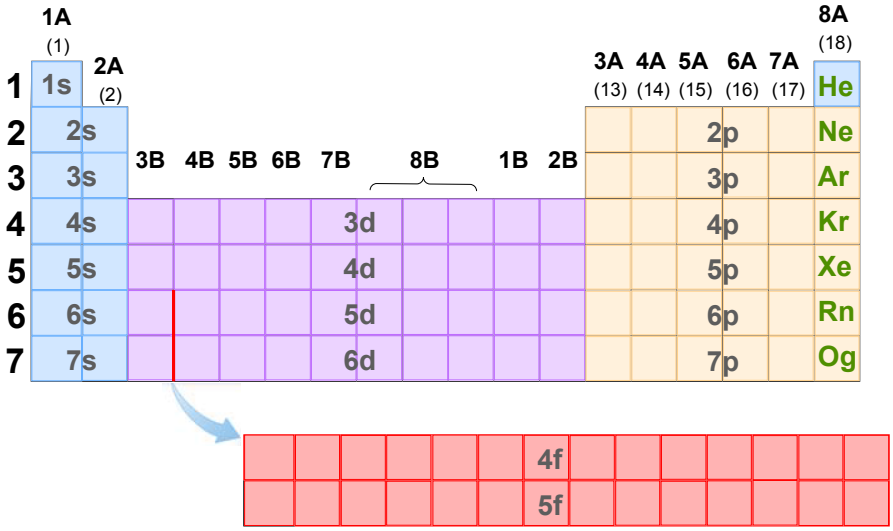
Mn (Z = 25)

PRACTICE: Write the ground state electron configuration for the following element:

Lead (Z = 82)

CONCEPT: THE ELECTRON CONFIGURATION REVIEW

- **Condensed Electron Configuration:** a faster way to write out electron arrangements for elements or ions.
  - □ With condensed electron configurations, we start at the last **noble gas** before the desired element.



  - □ Moving forward this will be the primary method to write electron configurations.

EXAMPLE: Provide the condensed electron configuration for the aluminum atom.

STEP 1: Find your **element** on the periodic table.

STEP 2: Locate the **noble gas** that comes before the **element** and place it inside brackets.

STEP 3: Continuing from the **noble gas** in brackets, complete the rest of the electron configuration.

PRACTICE: Write the condensed electron configuration and electron orbital diagram for the following element: **Zinc**