Name: _____ Atomic Structure Notes Period _____

1 Atomic Structure

1.0.1 Atomic Number

1. The _____ is the number of _____ in the nucleus of an atom.

1.0.2 Mass Number

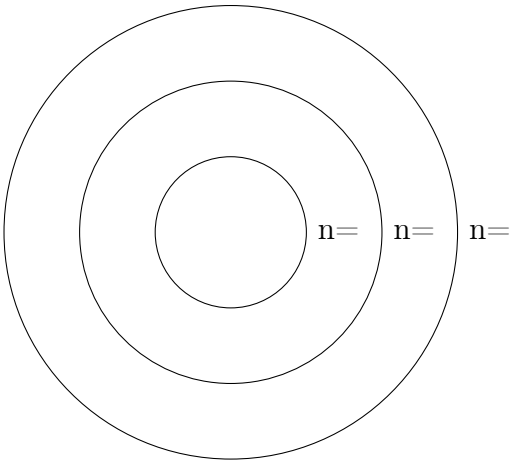
2. The _____ is the total number of _____ and _____in the nucleus of an atom.
3. In this symbol for Hydrogen: ^{1}H What does the 1 mean? _____
4. In this symbol for Helium: $^{4}_{2}He$
   - What does the 4 mean? _____
   - What does the 2 mean? _____
5. In this symbol for Lithium: $^{7}_{3}Li$
   - How many protons does Lithium have? _____
   - How many neutrons does Lithium have? _____
6. based on this symbol: ^{2}H
   - How many protons does Hydrogen have? _____
   - How many neutrons? _____

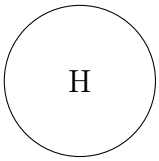
1.1 Bohr Model

7. The Bohr Model - Bohr proposed that an atom was a nucleus with electrons "orbiting" in different _____.
8. Electrons can only have certain energy values known as _____

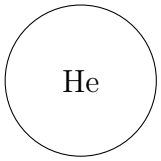
1.1.1 Energy Levels

9. The electrons closest to the nucleus have the _____ energy, while those further from away have _____ energy.

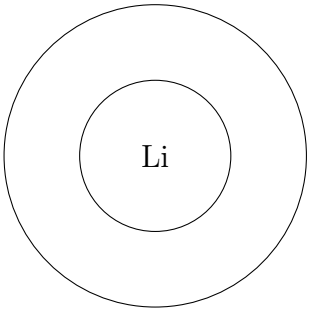




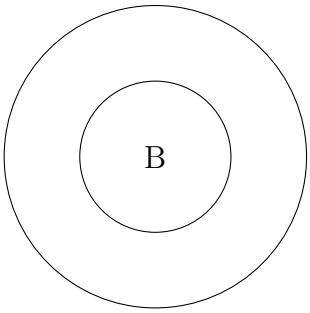
10. draw the electron configuration for H



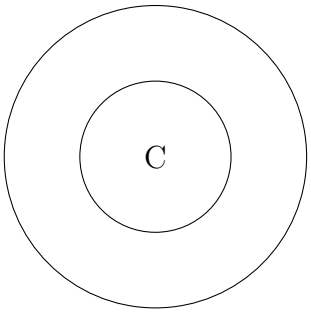
11. draw the electron configuration for He



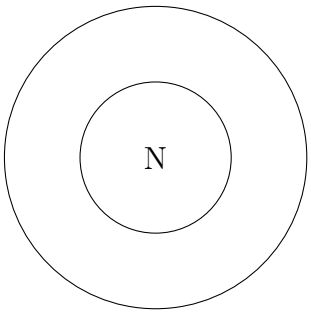
12. draw the electron configuration for Li



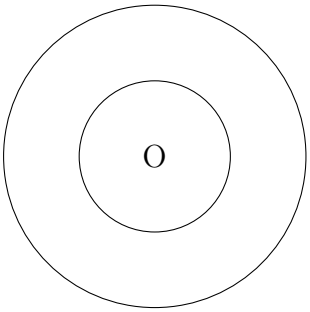
13. draw the electron configuration for Boron B



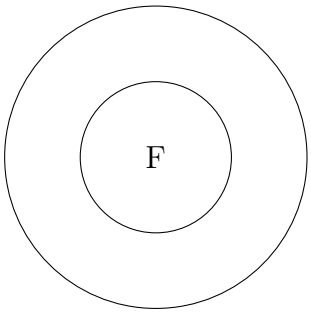
14. draw the electron configuration for Carbon C



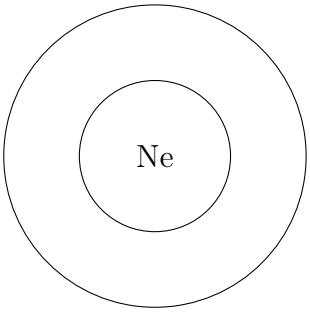
15. draw the electron configuration for Nitrogen N



16. draw the electron configuration for Oxygen O

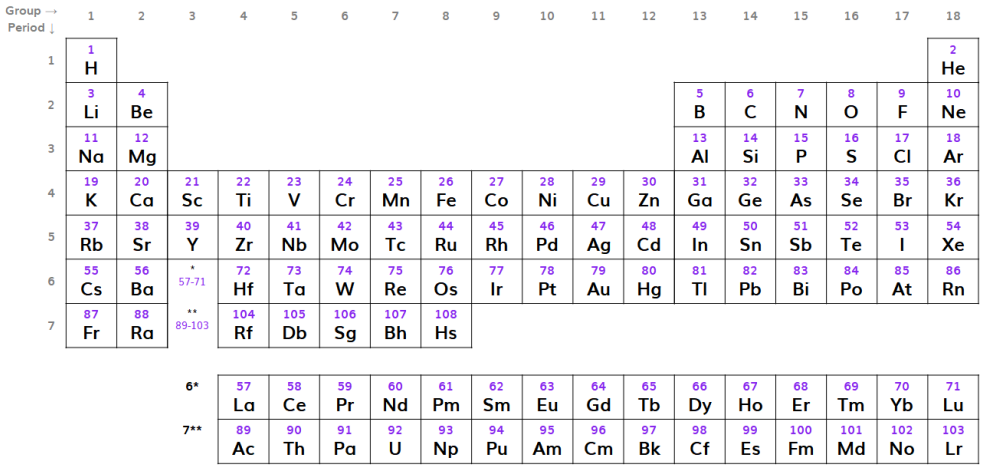


17. draw the electron configuration for Flourine F



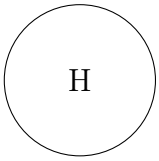
18. draw the electron configuration for Neon Ne

2 periodic table



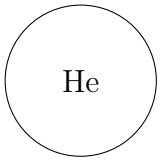
19. The Periodic Table has _____ periods and _____ groups.
20. The periods are _____ and the groups are _____.
21. You can know the _____ configuration of an element from its _____ in the periodic table.
22. The number of electron _____ (or energy levels) is equal to the _____ number.
23. The number of valence electrons is related to the _____ number.
24. For atoms in groups _____ and _____ the number of _____ electrons are equal to the group number.
25. For atoms in groups _____ to _____ the number of _____ electrons are equal to the group number minus 10.

2.0.1 Practice



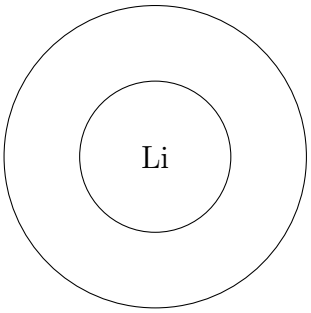
26. draw the electron configuration for H

    How many valence electrons does it have? _____

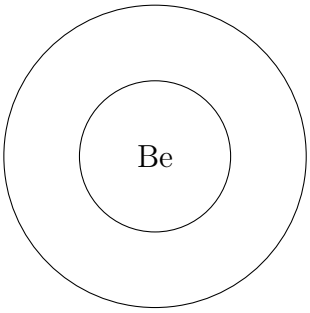


27. draw the electron configuration for He

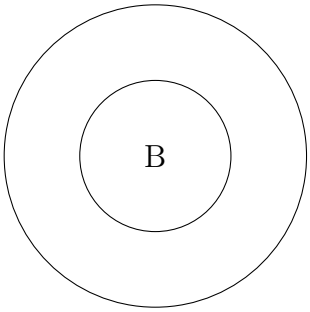
    How many valence electrons does it have? _____



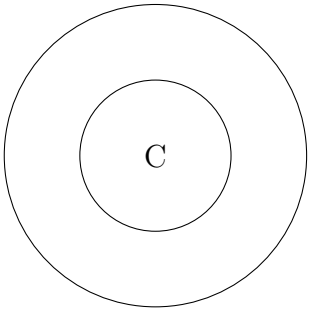
28. draw the electron configuration for Li
    How many valence electrons does it have? _____



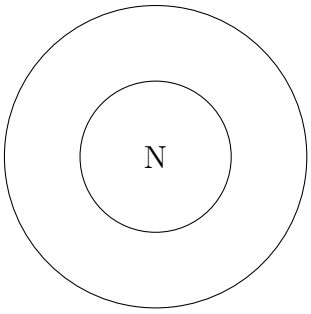
29. draw the electron configuration for Be
    How many valence electrons does it have? _____



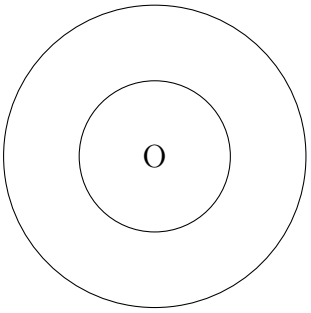
30. draw the electron configuration for Boron B
    How many valence electrons does it have? _____



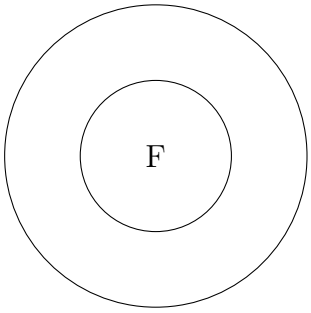
31. draw the electron configuration for Carbon C
    How many valence electrons does it have? _____



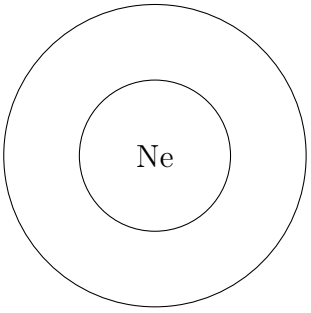
32. draw the electron configuration for Nitrogen N
    How many valence electrons does it have? _____



33. draw the electron configuration for Oxygen O
    How many valence electrons does it have? _____



34. draw the electron configuration for Flourine F
    How many valence electrons does it have? _____



35. draw the electron configuration for Neon Ne
    How many valence electrons does it have? _____

$$^{238}_{92}\text{U} \longrightarrow {}^{234}_{90}\text{Th} + {}^{4}_{2}\text{He}$$