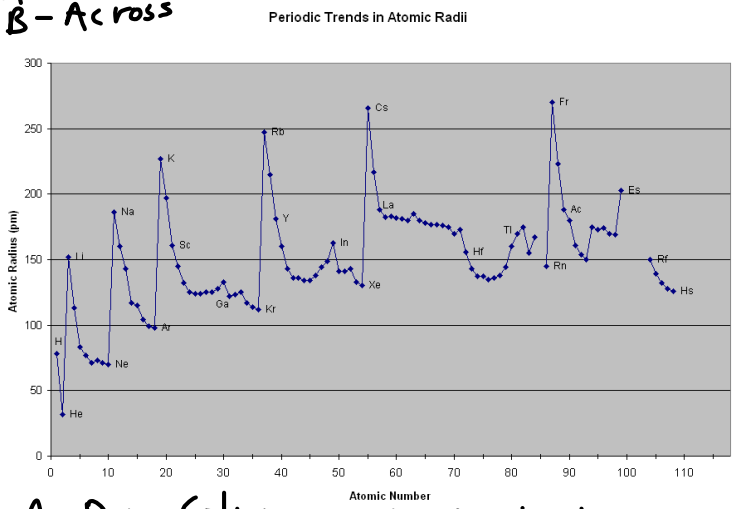
Trends in the Periodic Table

pattern ↗

A - Down
B - Across

Atomic Radius (Size)



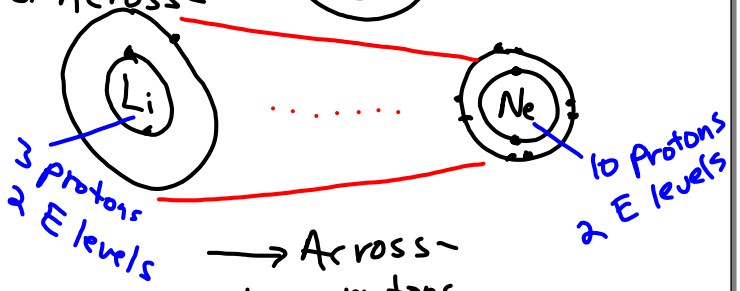
A. Down Column - atomic size increases

B. Across row - atomic size decreases

(A)

Reasoning - Column 1 - More "energy levels".

B. Across -



→ Across - more protons Pull on e⁻'s. "nuclear charge"

Examples -

1. Which is larger, F or Cl?

Cl larger because it has more energy levels.... (same column)

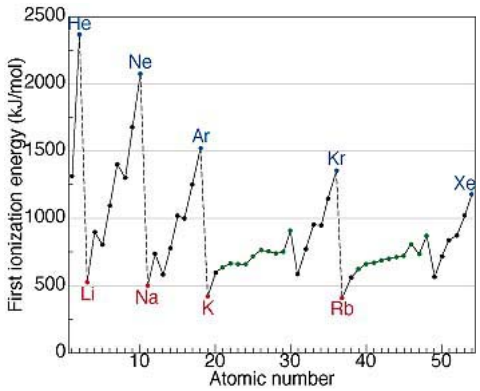
2. Which is smaller Na or Al?

Al - smaller. Greater nuclear charge (13 > 10) pulls e⁻'s closer (same energy levels)

Questions 52, 62

Ionization Energy

Energy needed to remove an electr



A. Down a column, ionization E decreases. Electrons are in higher E levels; easier to remove.

B. Across row - IE increases because there are more protons holding electrons tighter.

Ex. ① Which has greater I.E. F or Cl? F has fewer E levels & e^- are closer to nucleus. Harder to remove.

Ex. ② Which has greater IE, Si or Ar? Ar has greater nuclear charge - harder to remove.

Questions - as selected
#52..... 66

Rate of Reaction: Definition

Examples - speed $\frac{100\ km}{h}$ ← Δ distance / Δ time

Chemical reactions $\frac{\Delta \text{mass product/reactant}}{\Delta \text{time}}$

Also - colour, mass, temperature, voltage, volume

Read p.462-463 text

- Lab handout