

1. Skip
2. #9: $1s^2, 2s^2, 2p^5$
 #17: $1s^2, 2s^2, 2p^6, 3s^2, 3p^5$
 #35: $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 4s^2, 3d^{10}, 4p^5$
 - a. 7 valence electron
 - b. similar properties
 - c. Halogen Family
 - d. Fluorine (F), Chlorine (Cl), Bromine (Br)
3. Cesium: solid, metal, alkali metal
 Bromine: liquid, nonmetal, halogen
 Calcium: solid, metal, alkaline earth metal
4. Graph
5. Ionization Energy increases across a row.
6. As atomic radius increases, ionization energy decreases because with a bigger atom the valence electrons do not feel the positive pull of the nucleus as much as in a smaller atom.
7. Absorption: A, C, E
8. Emission: B, D, F
9. a. Yellow: F
 b. Blue: D
 c. Violet: B
 d. Violet is a high frequency color = high energy = long arrow.
 Yellow = low energy = short arrow

Multiple Choice

1. B
2. C
3. B
4. D
5. A
6. C
7. A
8. A
9. C
10. D
11. A
12. B
13. D
14. A
15. D (atomic mass, not atomic number)
16. C