NOTE: although not stated, you'll need to show work for many / all of these!

1. Select the ions that are isoelectronic with Ar:
   a. Cl⁻
   b. V³⁺
   c. Mn⁷⁺
   d. Li⁺
   e. S²⁻

2. Identify each ion:
   a. 3⁺ ion: 1s²2s²2p⁶
   b. 3⁺ ion: 1s²2s²2p⁶3s²3p⁶4s⁰3d³

3. List the following atoms/ions from smallest to largest:
   a. nitrogen, bismuth, antimony, phosphorous
   b. sulfur, chlorine, sodium, silicon, aluminum
   c. Mg²⁺, O²⁻, F⁻, N³⁻
4. List the following atoms from smallest to largest first ionization energy (IE$_1$):
   nitrogen, bismuth, antimony, phosphorous

5. List the following atoms from smallest (least favorable) to largest first electron (most favorable) affinity (EA$_1$):
   sulfur, chlorine, sodium, silicon, aluminum

6. Why it is unusual for the first ionization energy of S to be lower than the first ionization energy of P. Give a possible explanation.

7. Highest third ionization energy (IE$_3$) of the three elements given:
   B       Ca       F