

- d. Se < Br < Cl
- 8.60 a. Al
b. Sc
c. Al
- 8.69 a. S
b. In
c. As
- 8.77 a. $1s^2 2s^2 2p^6 3s^2 3p^6$ P^{-3}
b. $1s^2 2s^2 2p^6$ Mg^{+2}
c. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6$ Se^{-2}
- 8.79 a. group 4A has 2 unpaired electrons
b. group 7A has 1 unpaired electron
c. group 1A has 1 unpaired electron
d. group 6A has 2 unpaired electrons
- 8.81 a. Ti^{+2} : $[Ar]3d^2$ 2 unpaired electrons, yes paramagnetic
b. Zn^{+2} : $[Ar]3d^{10}$ no unpaired electrons, not paramagnetic
c. Ca^{+2} : $[Ar]$ no unpaired electrons, not paramagnetic
d. Sn^{+2} : $[Kr]5s^2 4d^{10}$ no unpaired electrons, not paramagnetic
- 8.87 a. $O^{-2} < S^{-2} < Se^{-2}$ Size increases when going down a group
b. $Cs^+ < I^- < Te^{-2}$ Size decreases with atomic number for isoelectronic species
c. $Sr^+ < Ba^{+2} < Cs^+$ Size decreases with atomic number for isoelectronic species, and increases down a group