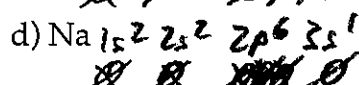
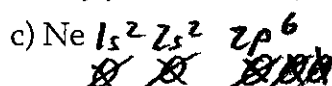
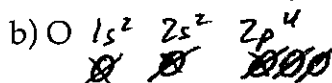
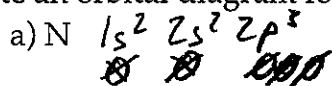
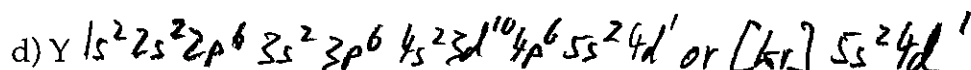
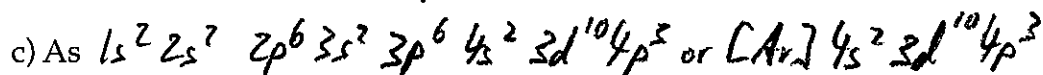
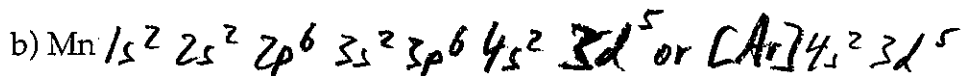
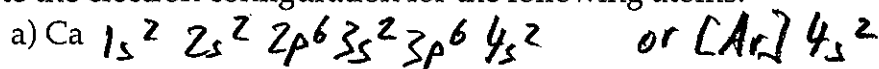


### PES and e<sup>-</sup> Configuration

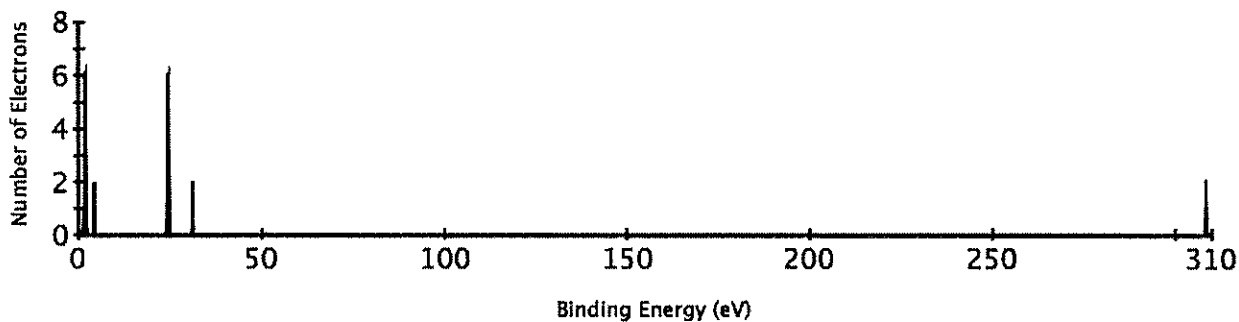
1) Write an orbital diagram for each of the following elements:



2) Write the electron configuration for the following atoms:



3) The photoelectron spectrum for argon is shown below:



Based on this spectrum how many energy levels are filled in an argon atom? Justify your answer.

There are 3 groups of peaks indicating 3 energy levels in the atom, the peak at ~30 eV is the 1s orbital, the peaks at ~25 eV are the 2s and 2p orbitals while the peaks at ~3 eV are the 3s and 3p orbitals.

How many electrons are in each energy level? Explain.

The 1s orbital has 2, the 2s+2p have 8 combined, the 3s+3p have 8 combined