CHM 1045 Exam 4 Review Sheet
Study the following:

- Orbital Diagrams
  Be able to draw diagrams of e^{-1}'s in their orbitals and subshells.
  Know which are valence e^{-1}'s (outermost s and p).

- Pauli Exclusion Principle (no two e^{-1} have four identical quantum # values)
  Review Example 8.01.

- Aufbau Principle (fill subshells in order of lowest energy first)
  Review Examples 8.02 and 8.03.

- Hund's Rule (put e^{-} unpaired in all of a subshell's orbitals first)
  Review Example 8.04.

- Atomic Sizes and their trends across and down the periodic table
  Review Example 8.05.

- Atomic Size Trends for Isoelectronic Ions
  Review Example 9.04 and this image.

- Ionization Energies (trends for first e^{-1} removed, also ion stability)
  Review Example 8.06, Figure 6.33, and Example 6.13.

- Electron Affinities (trends for adding an e^{-1}, also ion stability)
  Review Figure 6.35.

- Lewis Dot Symbols and Octet Rule for molecules, compounds, and ions
  Review Examples 9.01, 9.02, 9.06, 9.07, and 9.08.

- Exceptions to the Octet Rule (either more or less than four pairs of e^{-1}'s)
  Review Examples 9.10 and 9.11.

- Molecular Geometries and Dipole Moments
  Review the Molecular Geometry Tables, as well as
  Examples 10.01, 10.02, and 10.03.

- Hybrid Orbitals
  Review the Molecular Geometry Tables, Figure 8.21, and Example 10.04.

- Multiple Bonds
  Review Figures 8.22, 8.23, 8.24, and 8.25, as well as Example 10.05.