Retro HW Assignments (Zumdahl, 4th edition).
The home-made problems listed in this year's assignments are unchanged. In moving from edition 4 to 5, Zumdahl renumbered the problems, deleted some, and added a few more. So, there is not a 1:1 correspondence between the assignments given for the 5th edition and those listed below in the 4th edition. However, all of the same concepts are tested. If you saved some money by getting the 4th edition and do the problems listed below, that should be roughly equivalent to the 5th-edition assignments.

HW #1

Zumdahl chapter 15, exercises 11, 13, 15, 17, 21, 25, 27, 29, 31, 39, 41, 43
Zumdahl, chapter 21, exercises 15, 17

HW #2

Zumdahl chapter 15, exercises 47, 51, 53, 55, 59, 61, 69, 71, 75, 81, 83, 87

HW #3

Zumdahl chapter 12, odd-numbered exercises 23-37, 41-57, 61, 65, 67, 73, 77-93, 97, 107-113, 119, 123, 129.
Notes: for 81b, omit Zn, since this would be hard to predict. For 85, the answer is incomplete -- it should also refer to the lanthanide contraction as discussed in class. Question 89 is not written clearly. Try this variation. Consider two possible effects on the electron affinity of the atoms as you go down a column in the periodic table: (1) the orbital to which the electron will be added, and (2) the magnitude of electron-electron repulsions after the electron has been added. Explain the observed trend in electron affinities in terms of these effects. For 123d, the textbook hasn't given enough information yet for you to provide their recommended answer, but we'll see more about this in chapter 20.

HW #4

Zumdahl chapter 13, exercises 11, 13, 17, 19, 21, 25, 27, 29, 31, 45, 49, 51, 55, 57, 61, 63, 67, 69 (part referring to 45), 71 (part referring to 57), 73, 79 (part referring to 71), 81, 91, 95

HW #5

Zumdahl chapter 14, exercises 9, 13, 15, 21, 25, 31, 33, 37, 39, 41, 47, 51, 53, 57.
Note that question 57c and the accompanying answer in the solutions manual are incomplete and confusing. Answer this question instead (see the solutions for the answer to this part of the new improved 57).
Define the HOMO (highest occupied molecular orbital) as the highest-energy MO that contains electrons, and the LUMO (lowest unoccupied molecular orbital) as the lowest-

energy MO that doesn't contain electrons. From the CO MO energy level scheme (use the one for NO as shown in Figure 14.43, page 669), identify the HOMO and LUMO and sketch these orbitals, using the appropriate combination of atomic orbitals on C and O. Then show how the HOMO can be combined with a metal d-orbital to make a new sigma-bonding MO, and how the LUMO can be combined with a metal d-orbital to make a new π-bonding MO.

HW #6

Zumdahl chapter 16, odd-numbered exercises 11-25, 31, 33, 89, 91, 95

HW #7

Zumdahl chapter 20, exercises 9, 15, 21, 27, 33-41 (odd), 47, 53