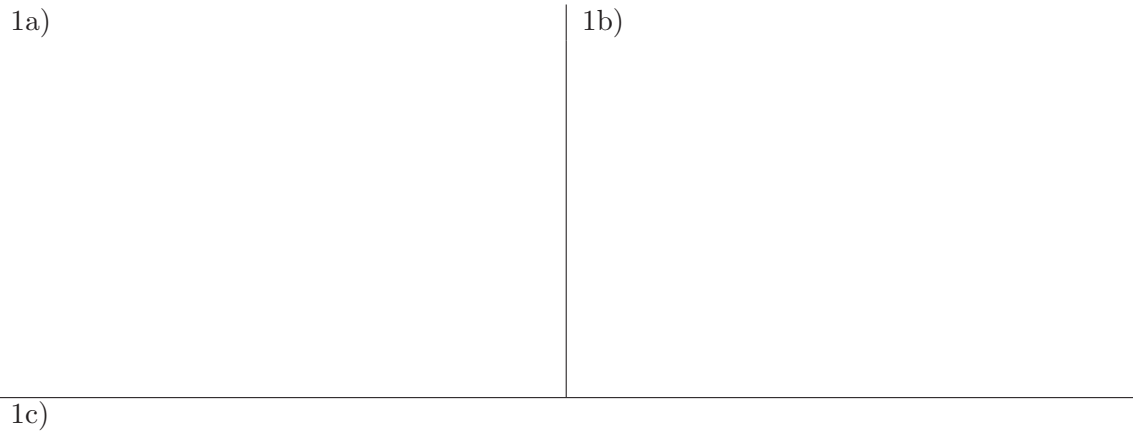


Name: \_\_\_\_\_

## APCS Problem Set 1: Basics of Computing

### 2.5 Book Questions

- 1 Ch. 1, #1: For parts a-c, (1) copy the diagram and (2) show the result of *every* gate's output (i.e., not just the final one).



### 3.4.1 Binary to Decimal

Show scratch work for questions 1–3 below.

### 3.4.2 Decimal to Binary

Show scratch work for questions 1–3 below.

### 3.5 Book Questions

5. Ch. 1, #16: Be sure to show sample tic-tac-toe games and the way in which you'd encode that game's state (or the arrangement of Xs and Os). *Hint: Imagine that you were going to take a mental snapshot of a tic-tac-toe game you see. What information would you have to record in order to recreate that exact setup again later? How could you use a string/sequence of 0s and 1s to "save" that information?*

## 4.2 Software Life Cycle

Litvin §2.1 has a bulleted list of tasks involved in software development, which represent the *software life cycle*. Take that list and present it here as a flowchart, where each box is one of the steps Litvin mentions. Using arrows, connect each box to the box or boxes that represent the next logical step(s) in the process.

## 5.1 How old were you then?

Teacher's initials: \_\_\_\_\_

## 5.2 Simple Math

In the space below, write code that answers Ch. 2, #11. Note that you should write the program on a computer, first, before writing anything below. That will help you to correct errors preventing the program from working. **Save your code in your Locker folder on the APCS server: L:\workspace0\ps01. If you work from home, be sure to bring your files to school on a flash drive or send the files to yourself via email.**

When writing code by hand — as you'll need to do on the AP exam — make sure you write neatly and show proper indentation. Points will be deducted for hard-to-read responses.

## 7 Submission & Affirmation of Academic Honesty

Complete this problem set on (or before) the due date mentioned in §1.3. All work – typed and handwritten – must be *neat*. Remember, spelling and grammar are considered during the grading process!

You should recall the section in the course syllabus titled *Academic Honesty*. If you have complied with the guidelines set forth there, please complete the portion of the paper form corresponding to this section of the problem set.

*“I hereby certify that I have upheld the guidelines for Academic Honesty for this course. All work presented here, in written form, and in my APCS locker, in file form, is my own. Students with whom I worked and/or consulted for help are listed below.”*

Students with whom you worked:

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_