

# CS 140: Intro to Computer Science, Fall 2011

## Homework 2

Due (in class or via email) by 1pm on Monday, Sept. 18 2011

1. Do the following arithmetic conversions:

- (a) Convert 3615 (base 7) to its base 10 representation.
- (b) Convert 298 (base 10) to its base 8 representation.

2. Perform the following operations:

- (a) Express in base 4 the sum  $32311$  (base 4) +  $23121$  (base 4).
- (b) Express in base 13 the sum  $169A2$  (base 13) +  $B963C$  (base 13).

3. Perform the following subtractions:

- (a)  $732$  (base 8) -  $256$  (base 8)
- (b)  $1011000$  (base 2) -  $11001$  (base 2)

4. **Extra Credit**

The following companies were giants in the field of computer hardware in early generations: IBM, Remington Rand, NCR, DEC, Hewlett Packard, Control Data Corporation, Burroughs, Intel, and Xerox.

Some of these companies are still in business today under the same name. Others no longer operate under the original name, due to corporate buy-outs, mergers, or name changes.

For each of the nine companies, identify whether or not it still operates under the given name, and if not identify the current company which subsumes it.

For this question, you may use the internet or other outside sources, in order to research the history of these companies. If your answer relies heavily on a particular website, article, or book, please be sure to cite your source by mentioning the link that you used.