

CS 135 Discrete Structures

Homework Assignment #4

All problems taken from 'Rosen' with the exception of a few custom problems at the end of the assignment.

Remember to include the Pledge on your submission.

Section 2.3

- #1(a-c)
- #12(all)

Note: $\lceil x \rceil$ denotes the “ceiling” of x , the least integer not less than x . (In other words, round up to the nearest integer if x is not an integer.)

- #13(all)

Note: See note above.

Section 2.4

- #4(all)
- #9(a-c)

Section 5.4

- #8 (Describe the algorithm in words and symbols)
- Write a recursive procedure in Scheme that implements the algorithm from #8 above.
(HINT: Actually write it and test it in DrRacket before including it in your written submission.)
- Write a recursive procedure in Scheme that builds a list using a starting value, a step amount, and a maximum value. Make sure to check for invalid cases (see the 3rd example below). Call this procedure (build-seq start step end). Example execution may be:
 - (build-seq 2 3 8) → '(2 5 8)
 - (build-seq 2 3 9) → '(2 5 8)
 - (build-seq 2 -1 8) → '() ;invalid inputs