

COSC 240
Spring 2019
Problem Set 7
Due by class time on April 23, 2019
60 points

1. (20 points) Draw a skip list containing the following elements:
1, 4, 5, 19, 34, 52, 53, 89, 99, 102
2. (20 points) Give an example of a graph with 6 vertices such that Algorithm 1 for vertex cover in <http://www.cs.cmu.edu/afs/cs/usr/avrim/www/451f12/lectures/lect1106.pdf> will find a vertex cover whose size is exactly twice as large as the minimum vertex cover. List the minimum vertex cover & the vertex cover found by Algorithm 1.
3. (20 points) Draw a sorting network for bubble sort with 5 inputs.

Recommended exercises:

1. For the systolic arrays discussed in the class, show the state of the array after 1, 2, 3 and 4 cycles, respectively.