

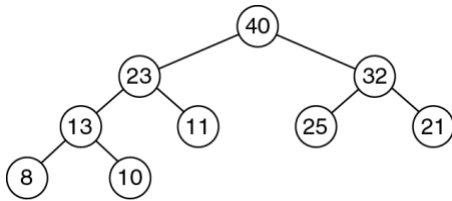
## CSC 530/730

### W6 Exercise 4

#### Heaps

##### Problem 1

Show the array implementation of the following heap:



##### Problem 2

Consider the array implementation of a heap as follows.

0	1	2	3	4	5	6	7
40	27	32	15	14	20	25	11

Without drawing the heap tree, answer the following questions.

- Show the left and right children of 32 in the heap.
- Show the parent of 14 in the heap.

##### Problem 3

Create a heap using the data entered in the following order:

15, 24, 6, 12, 35, 60, 88, 67, 72, 100

- Show intermediate binary trees during of the process of building and the resulting heap tree. (You do not have to show the array content for storing the tree nodes.)
- Then insert 95 into the heap, and show the resulting heap tree after the insertion.
- Finally, do a `remove` operation on the heap, and show the resulting heap tree after the deletion.

##### Submission

NO submission is needed.