CSE 332: Data Structures and Parallelism

QuickCheck: Heaps Solutions
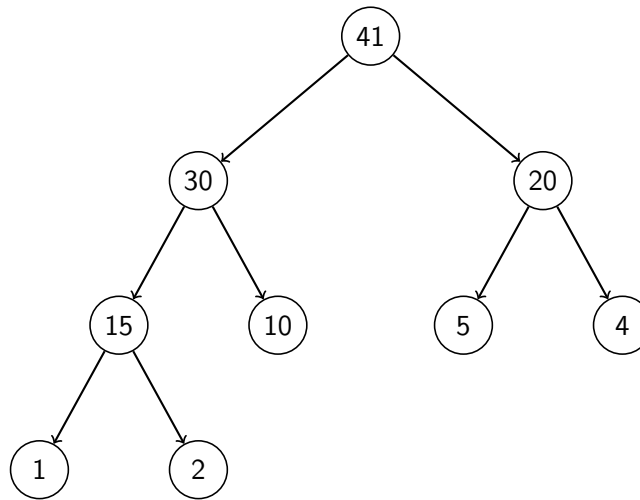
0. You're My Priority!

(a) Insert the following numbers into a **max heap** in the order provided:

$$10, 15, 5, 2, 20, 30, 4, 1, 41$$

DO NOT use `buildHeap`; just insert them one by one. Showing your work might be prudent on a real exam (for partial credit).

Solution:

(b) Re-order the numbers so that if you were to insert them into a heap again, (1) the result would be an identical heap, and (2) the number of comparisons is minimal.

Answer:

41	30	20	15	10	5	4	1	2
heap[0]	heap[1]	heap[2]	heap[3]	heap[4]	heap[5]	heap[6]	heap[7]	heap[8]

(c) Draw out the array version of the heap from part (a).

Answer:

41	30	20	15	10	5	4	1	2
heap[0]	heap[1]	heap[2]	heap[3]	heap[4]	heap[5]	heap[6]	heap[7]	heap[8]