

Heaps Worksheet

Name: _____

1. What is the worst-case running time of each of the following methods on the given data structures. Assume they are currently holding n elements. For the trees, assume the height is h unless you know otherwise (and in some cases you should know otherwise).

	BST	AVL Tree	Heap	Linked List	Array
insert/add					
delete/remove					
search/contains					
maximum					

2. Explain why, even though a heap is a binary tree, an array implementation works well.
3. Should a `search` method be implemented on a heap? Why or why not? What would its efficiency be?
4. What data structure(s) we have discussed so far would work well to implement a priority queue?
5. *Tricky question:* Explain in which circumstances a binary search tree can be a heap.