Name: _____ Andrew Id: _____

15-121 Fall 2019 Quiz 11
Up to 24 minutes. No calculators, no notes, no books, no computers. Show your work!

1. **Binary Heap**

   Consider the following array representation of a binary heap:

	98	55	51	34	53	37	43	10	31	17	30		

   (a) (4 points) Draw the heap represented by this array.

   (b) (3 points) Give the array after adding 52 to the heap. Write your final answer in the boxes below.

   (c) (3 points) Building on your answer from part b, give the array after calling `removeMax()` on the heap. Write your final answer in the boxes below.


```
bear;4
cat;3
lion;4
tiger;5
monkey;6
lion;8
cat;6
bear;8
lion;12
---
bear->8
cat->6
lion->12
monkey->6
tiger->5
```