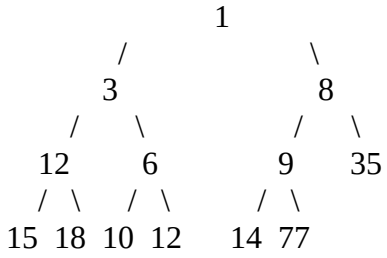
Computer Science I
Practice Problems: Heaps

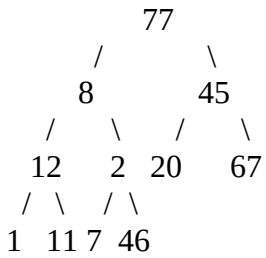
1) Show the result of inserting the item 7 into the heap shown below:



2) Show the result of removing the minimum element from the original heap in question #2 (without 7) from above.

3) Show the array representation of the original heap from question #2.

4) Run the whole Make Heap function on the following random values:



5) Given the following specifications for a heap implementation, implement the (a) heapify function and (b) the heap sort functions below.

```
struct heapStruct {

    int* heaparray;
    int capacity;
    int size;
};

struct heapStruct *initHeap();
struct heapStruct *heapify(int *values, int length);
void percolateDown(struct heapStruct *h, int index);
void percolateUp(struct heapStruct *h, int index);
void insert(struct heapStruct *h, int value);
int removeMin(struct heapStruct *h);
void sort(int values[], int length);

struct heapStruct *heapify(int *values, int length) {









}

void sort(int values[], int length) {









}
```