

CS2223
HW#3 SOLUTIONS

(a) $\lfloor \lg n \rfloor$

(b) If the input is sorted, in increasing or decreasing order, the height is $n-1$. Note that these are not the only worst-case instances.

(c) Since INSERTing into a table of k elements takes in the order of k operations (in the worst

case), then the statement takes time in the order of $\sum_{n \geq k \geq 1} k = \frac{n(n+1)}{2} \in \Theta(n^2)$