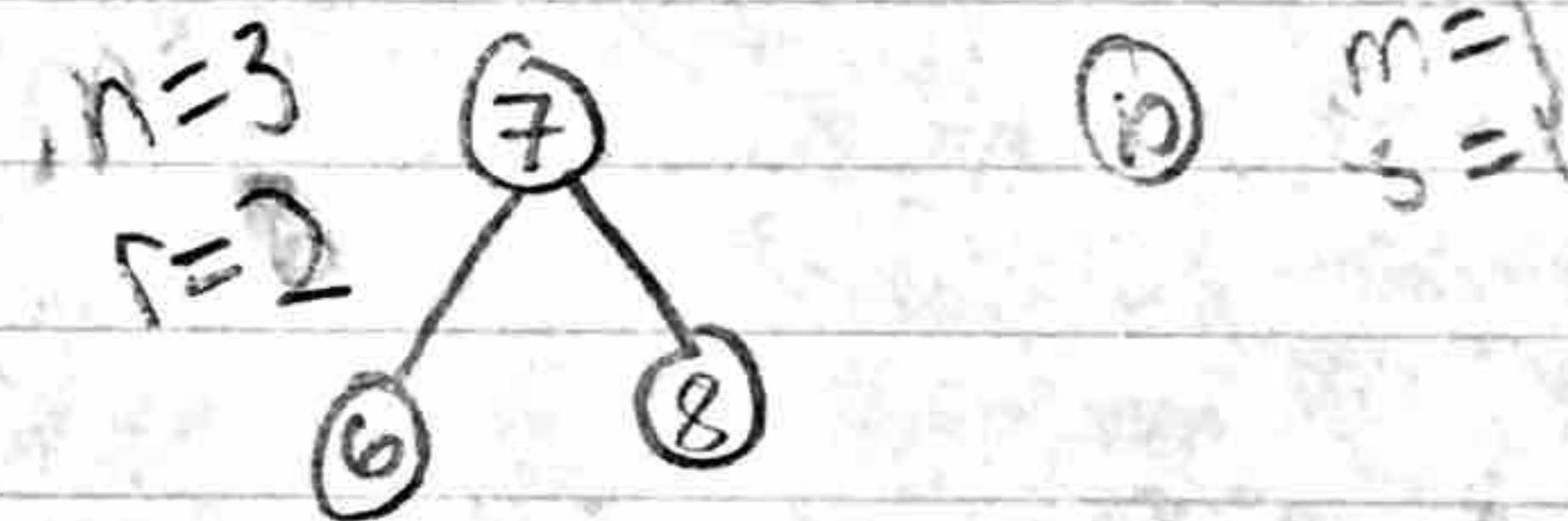
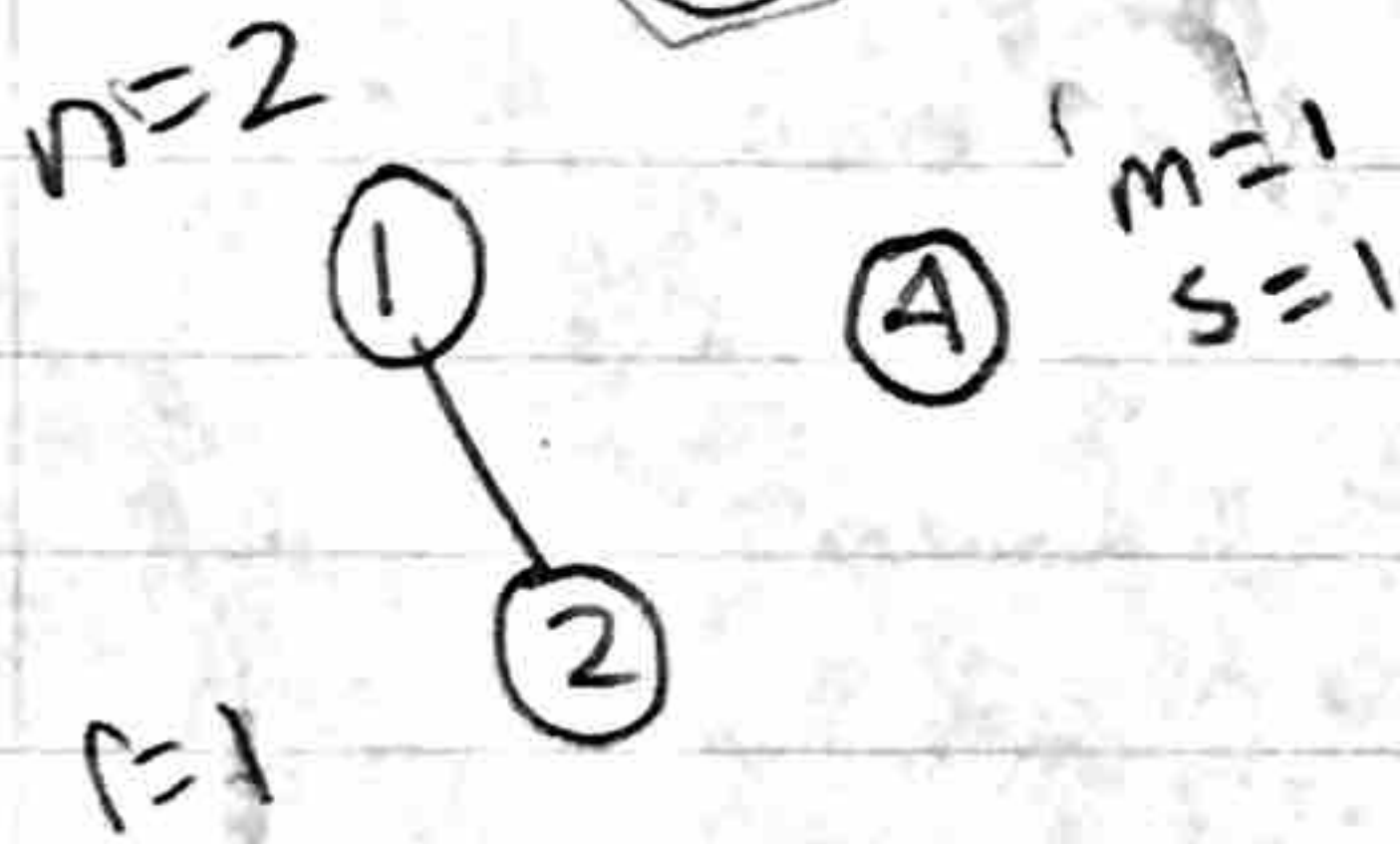
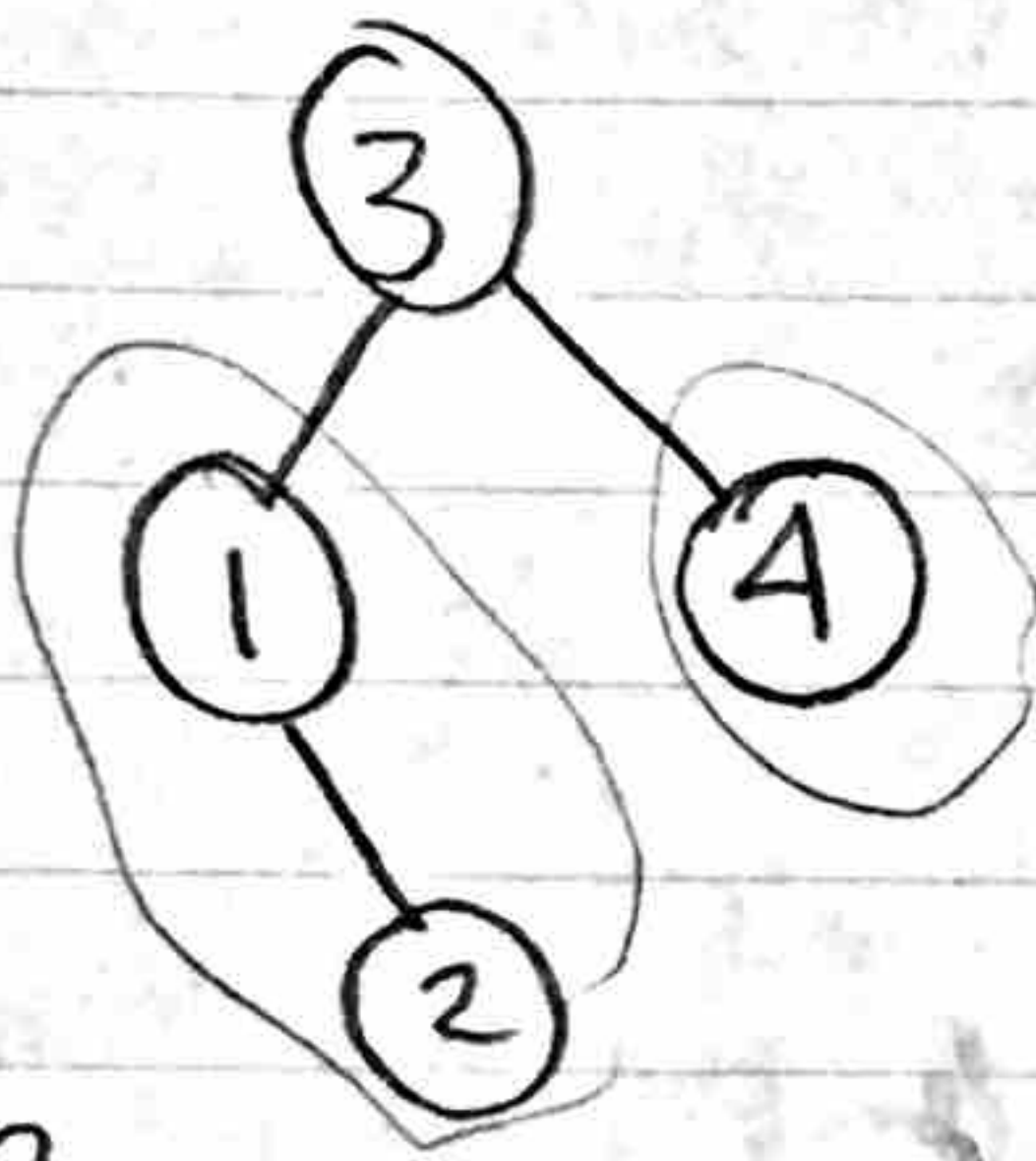
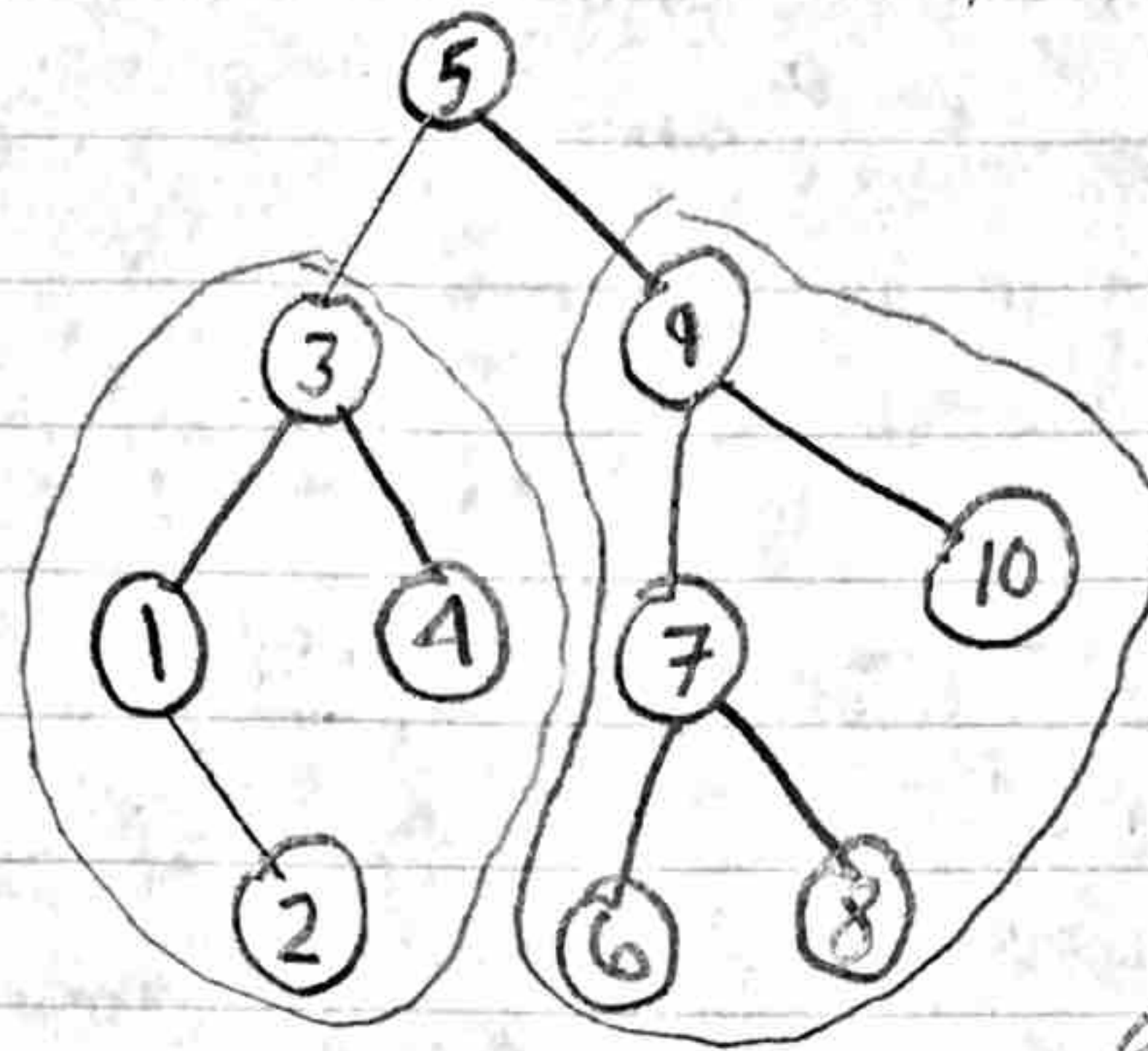


(b) the number of skew trees of n nodes
we know that the maximum height of such a tree
is $n-1$

we also know there are two possible skew trees,
One that starts with n & heads towards $n-(n-1)$
& one that starts at $n-(n-1)$ & heads towards n
So the total # of permutations is 2^{n-1}

5.) $\binom{n+m}{n} \cdot r \cdot s$



$$\binom{2+1}{2} \cdot 1 \cdot 1 = \binom{3}{2} = 3$$

$$\binom{3+1}{3} \cdot 2 \cdot 1 = \binom{4}{3} \cdot 2 = 8$$

So now for the full tree using $r=3, s=8$
 $n=4, m=5$

$$\binom{9}{4} \cdot 3 \cdot 8 = 126 \cdot 3 \cdot 8 = 3024$$

permutations

2.) we want to merge k sorted lists into one sorted list
 6.5-9 pg 166 1- to initialize our min-heap, we must first choose the
 the first element from each list, so the heap is size k
 & this takes $O(k)$ to build. By this point the
 minimum of the min-heap is stored in the root

2- next we should put the root into the final sorted list.
 The root is replaced w/ the next element from the list.
 Since we're only performing one operation, this is $O(1)$

3- run min-Heapify on the root which will take
 $O(\log k)$

4 repeat step 2 until the list is empty

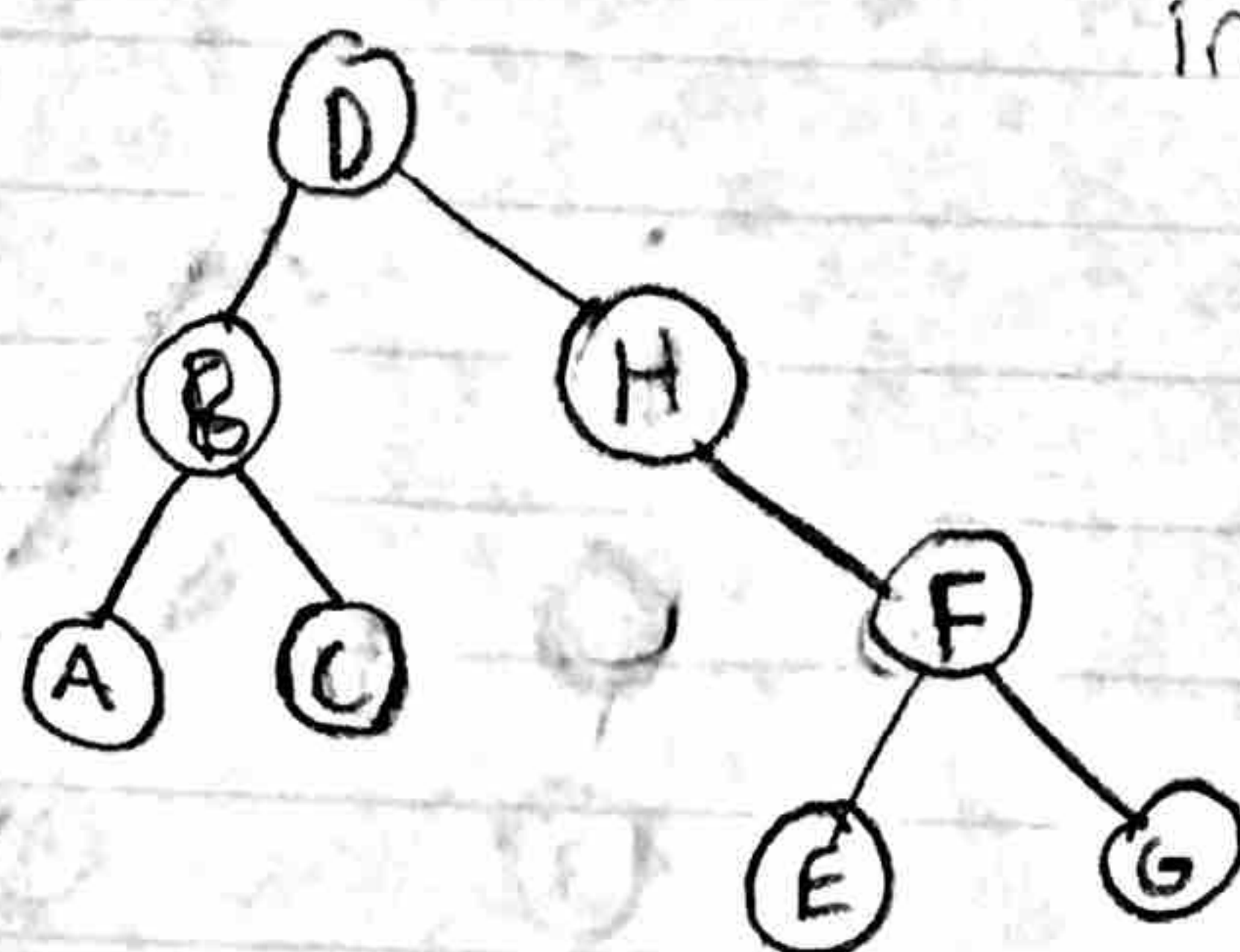
Since steps 2 & 3 should repeat n times, total # of
 elements, we have to multiply them by n

so $O(k) + n(O(1) + O(\log k))$

$O(k) + n(O(1) + n(O(\log k)))$

↑ we can see that
 this will take the longest
 so the other two become
 irrelevant

3.) so running time is $O(n \log k)$



inorder abcdefgh
 acbегfhd

4.) The inorder transversal of T' is equivalent to the
 postorder transversal of T because the root is the
 last node listed in a postorder transversal & it is
 also last in a first child next representation

1.) $A = [5, 3, 17, 10, 84, 19, 6, 22, 9]$

6-3.1 pg 159

