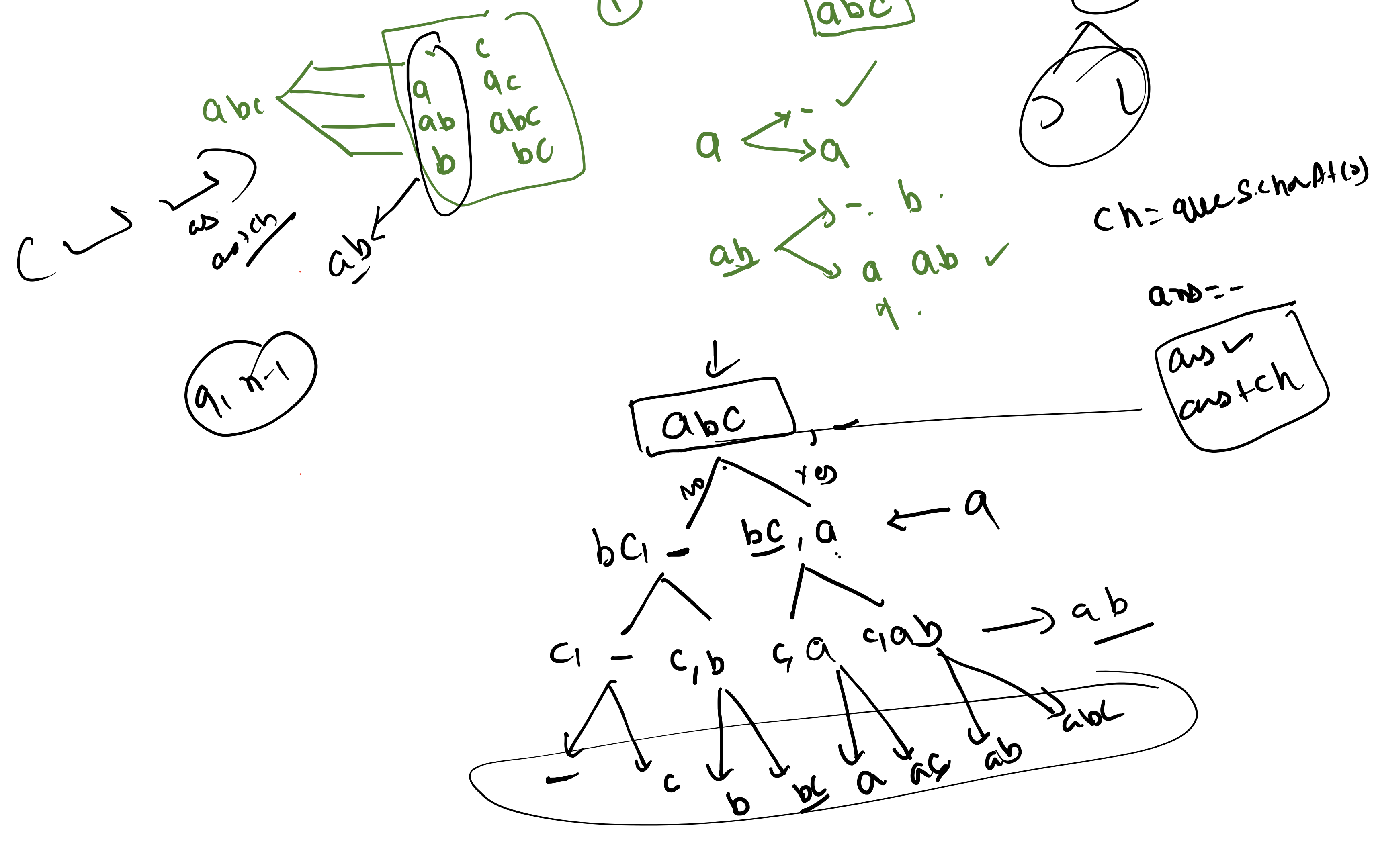
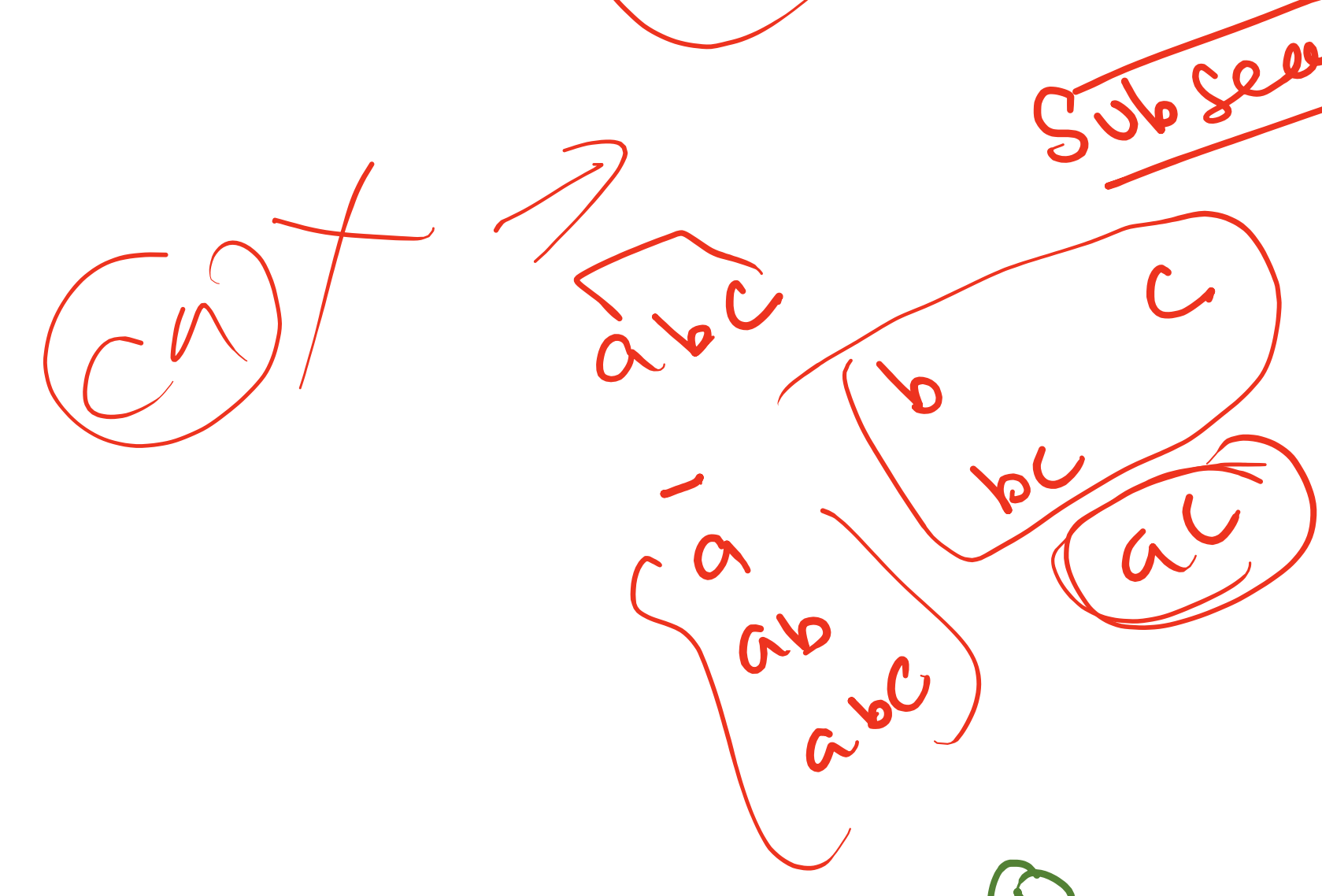
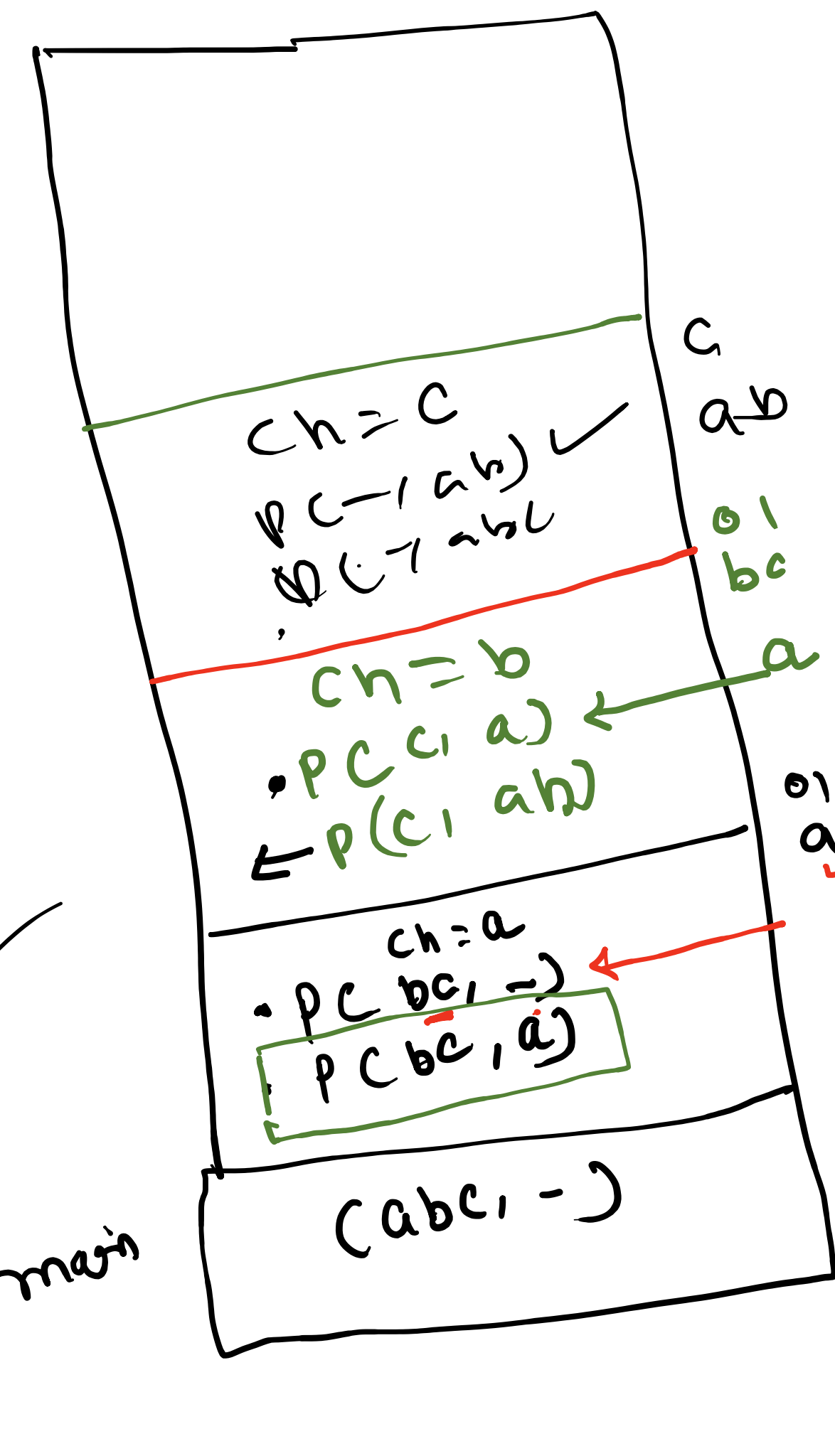
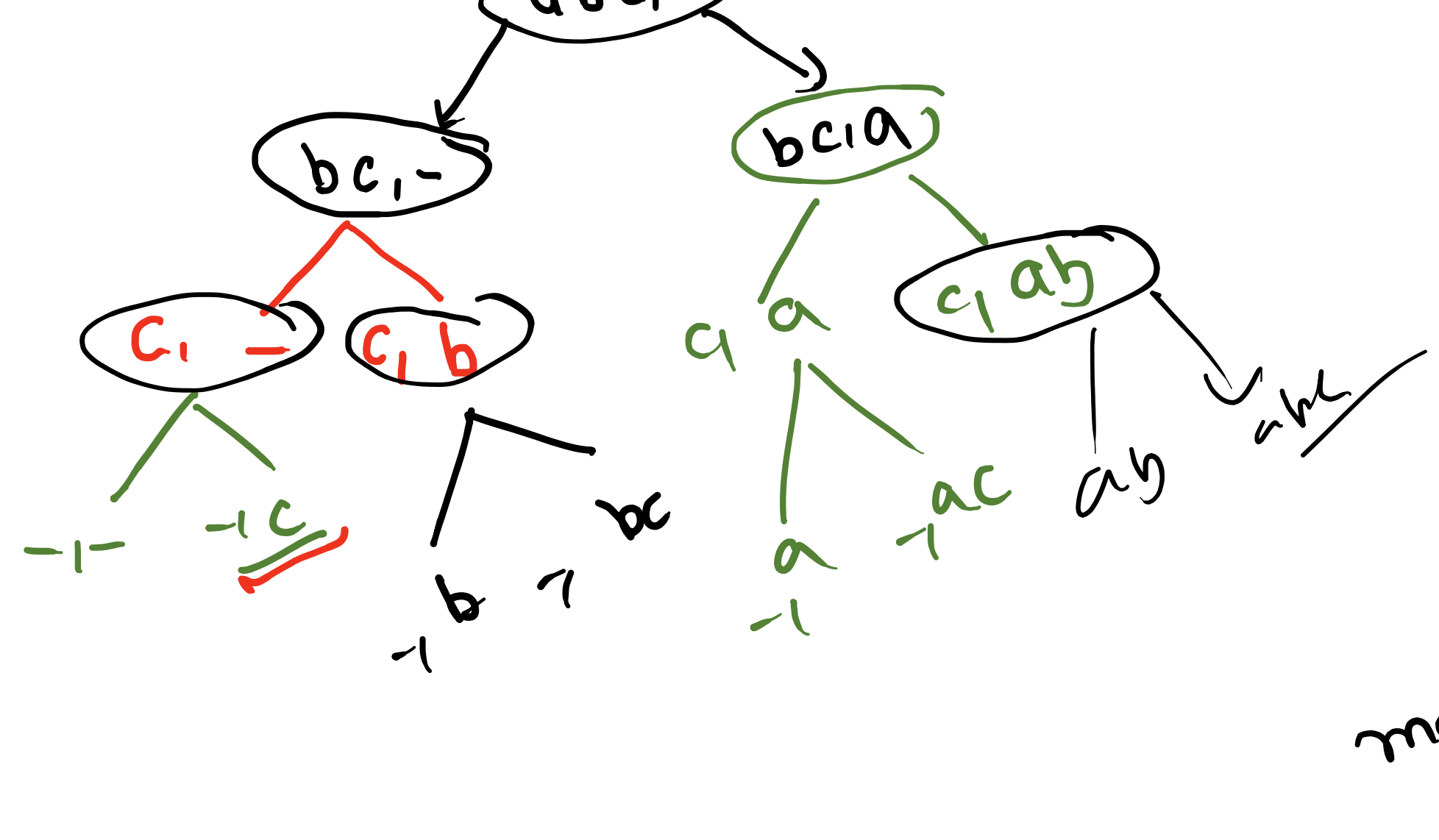


Handwritten notes and diagrams for a recursive problem:

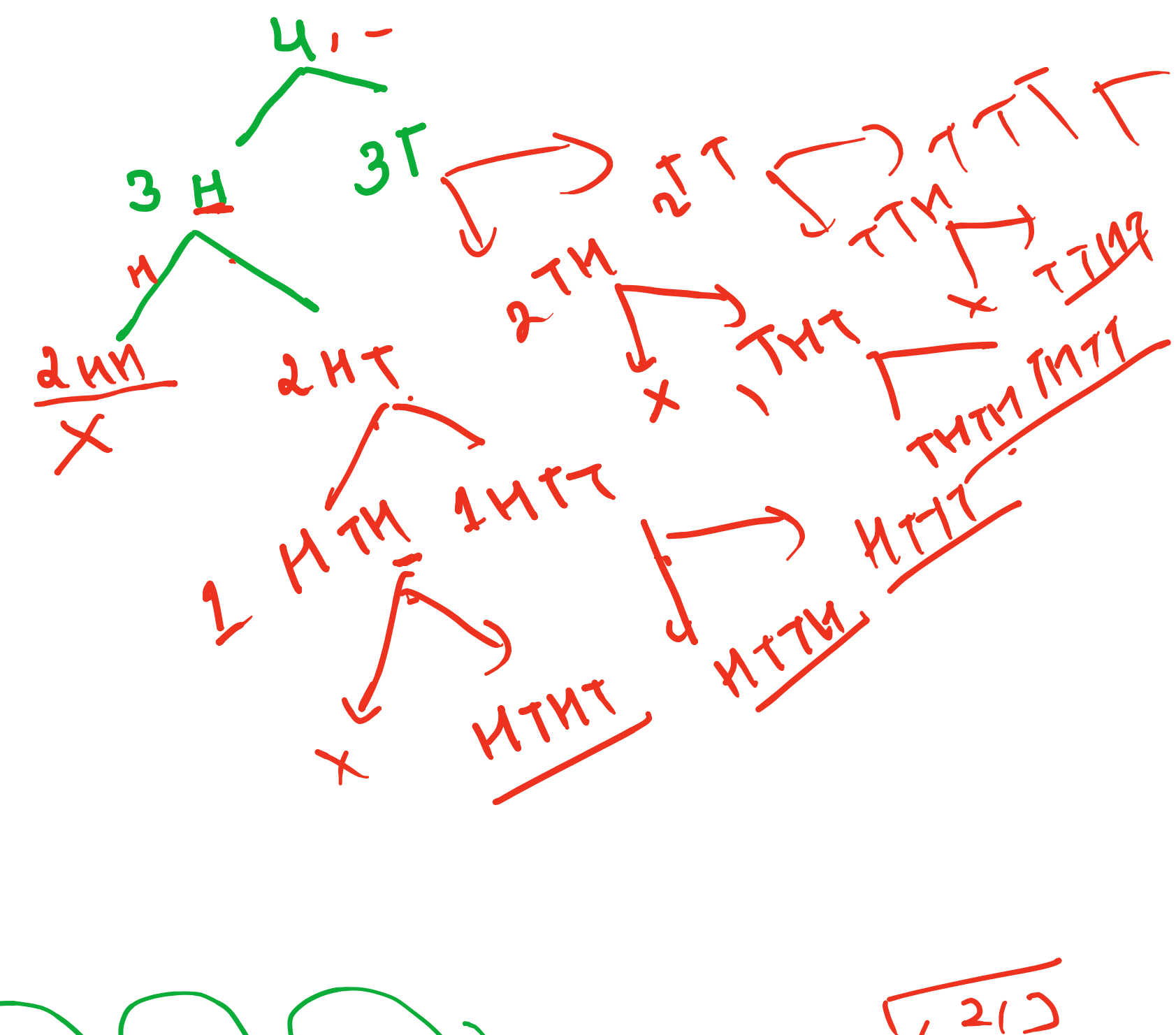
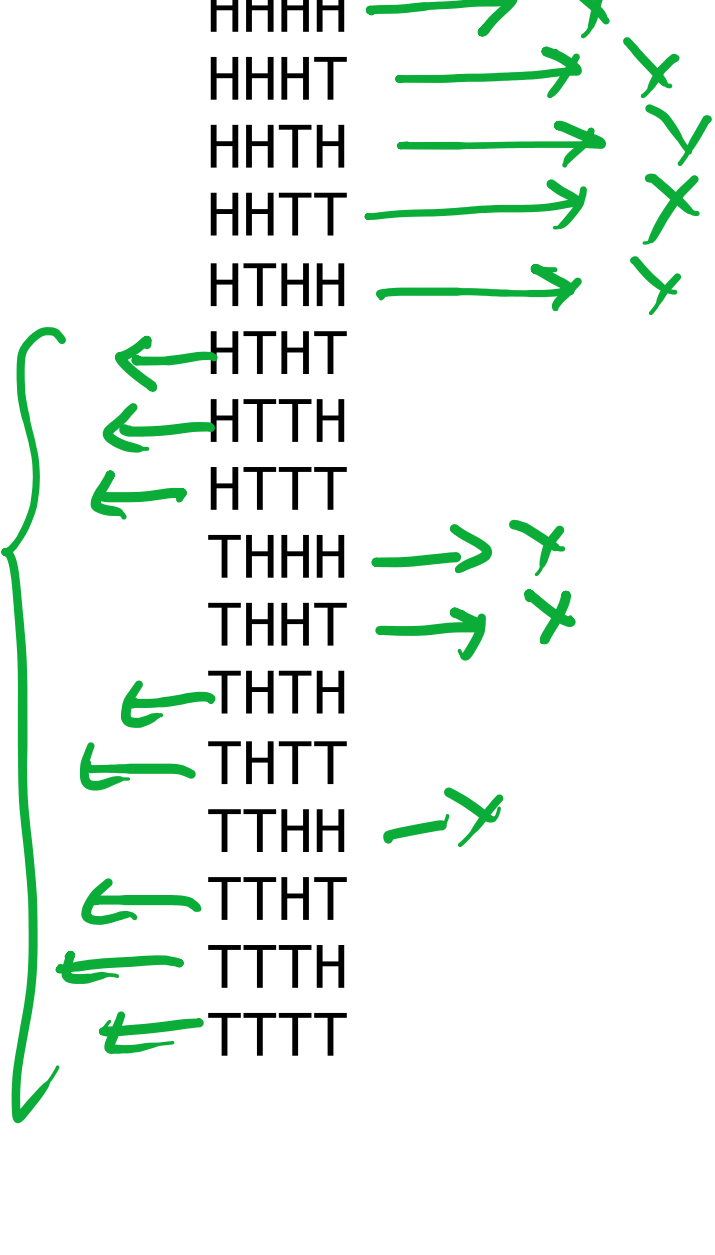
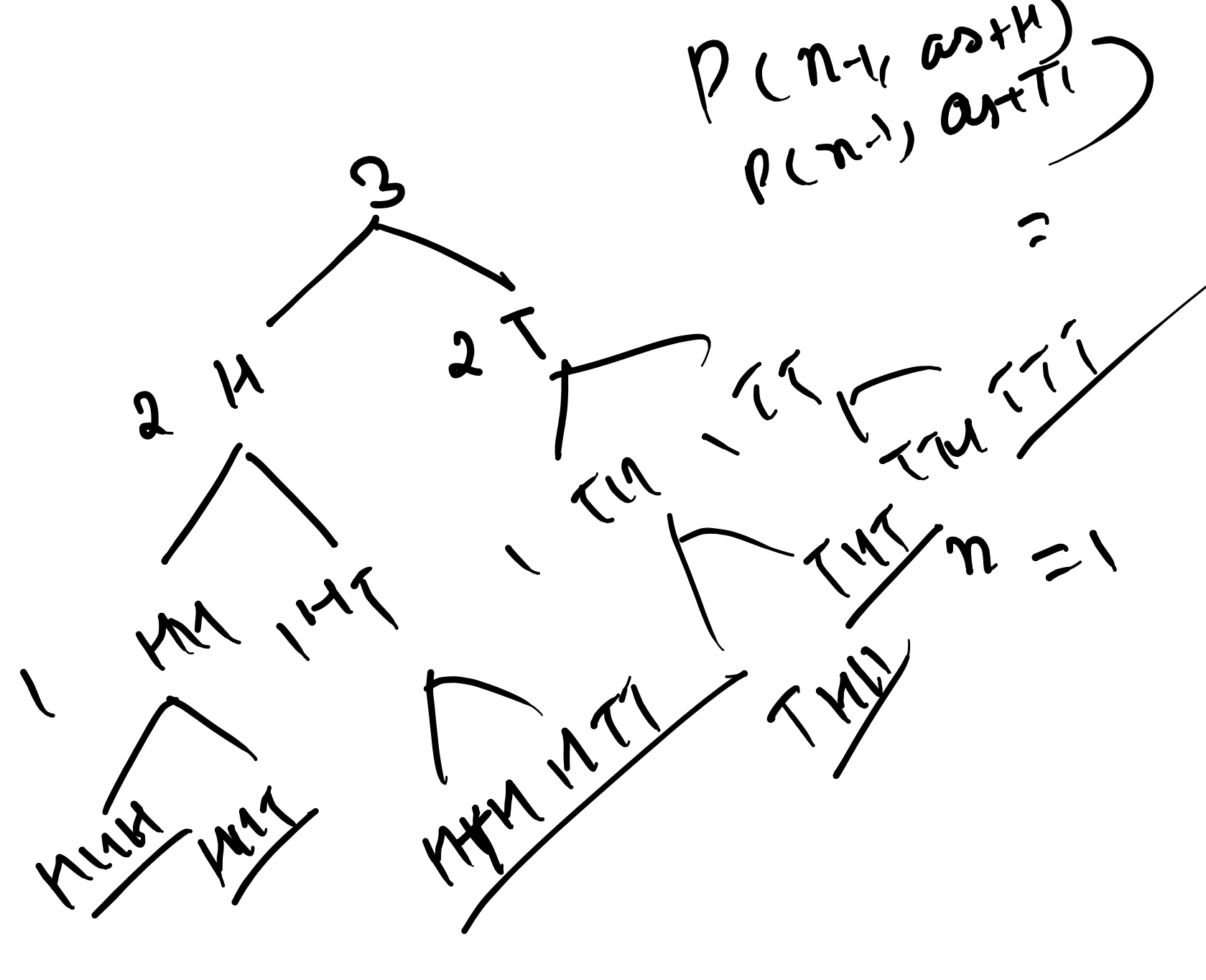
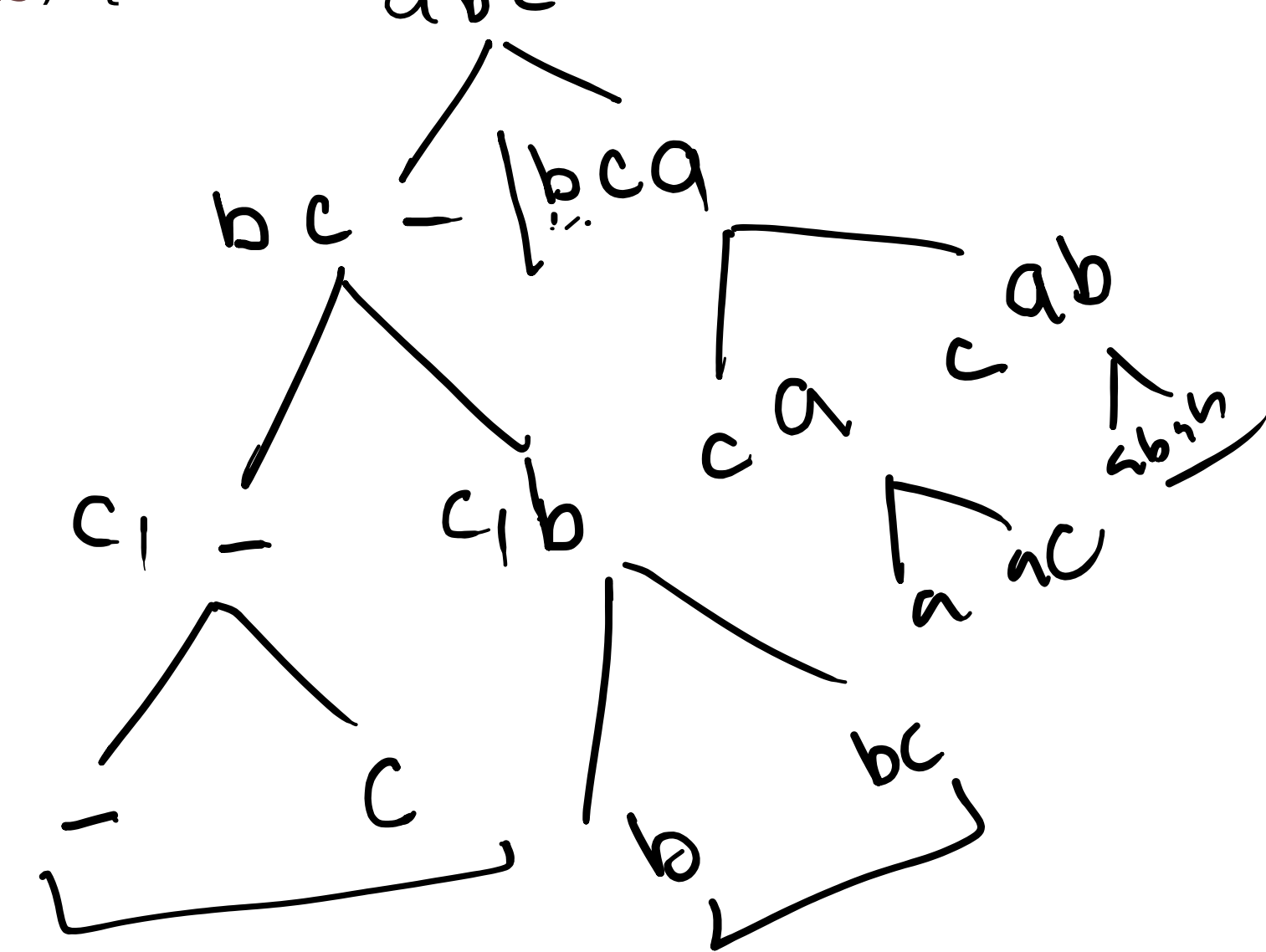
- Recurrence relation:  $m_i = (m_{i-1})!$
- Base case:  $8! = 7!$
- Diagram showing a sequence of numbers:  $m_{i-1}, m_i, m_{i+1}$
- Diagram showing a sequence of numbers:  $0, 1, 2, 3, 4, 5, 6, 7, 8$
- Diagram showing a sequence of numbers:  $0, 1, 2, 3, 4, 5, 6, 7, 8$



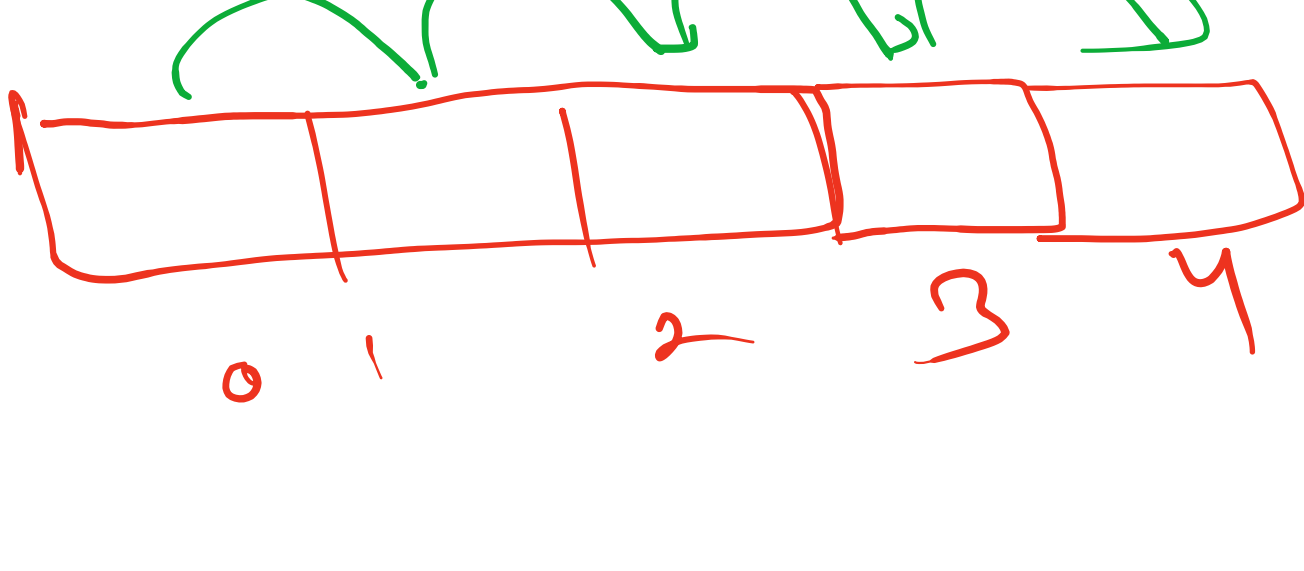
```
public static void print(String ques, String ans) {  
    if (ques.length() == 0) {  
        System.out.println(ans);  
        return;  
    }  
    char ch = ques.charAt(0);  
    print(ques.substring(1), ans + ch);  
    print(ques.substring(1), ans + ch);  
}
```



```
public static void print(String ques, String ans) {  
    if (ques.length() == 0) {  
        System.out.println(ans);  
        return;  
    }  
    char ch = ques.charAt(0);  
    print(ques.substring(1), ans);  
    print(ques.substring(1), ans + ch);  
}
```

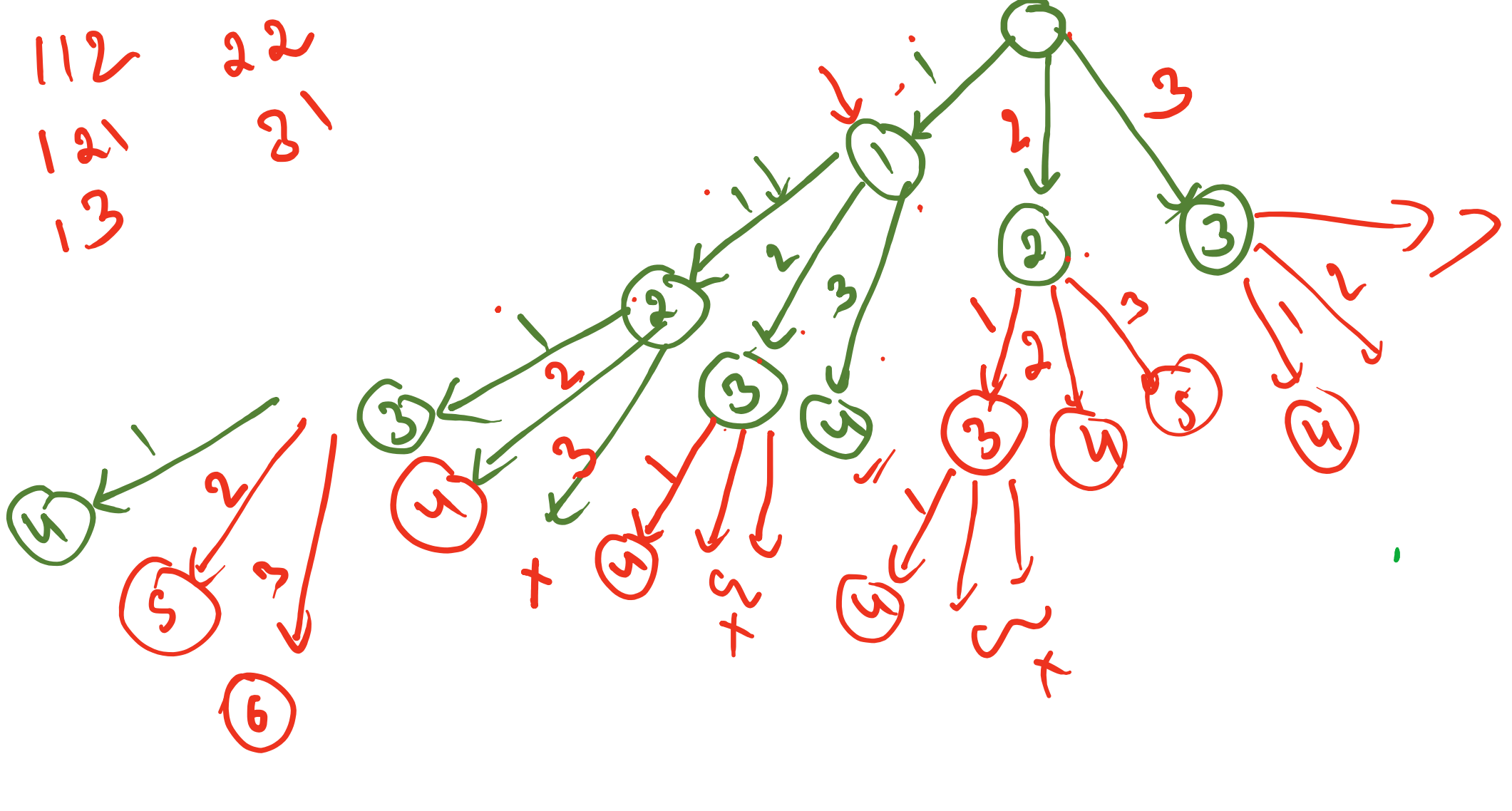


6 Pairs



Rec-20

1111 211  
112 22  
121 21  
13

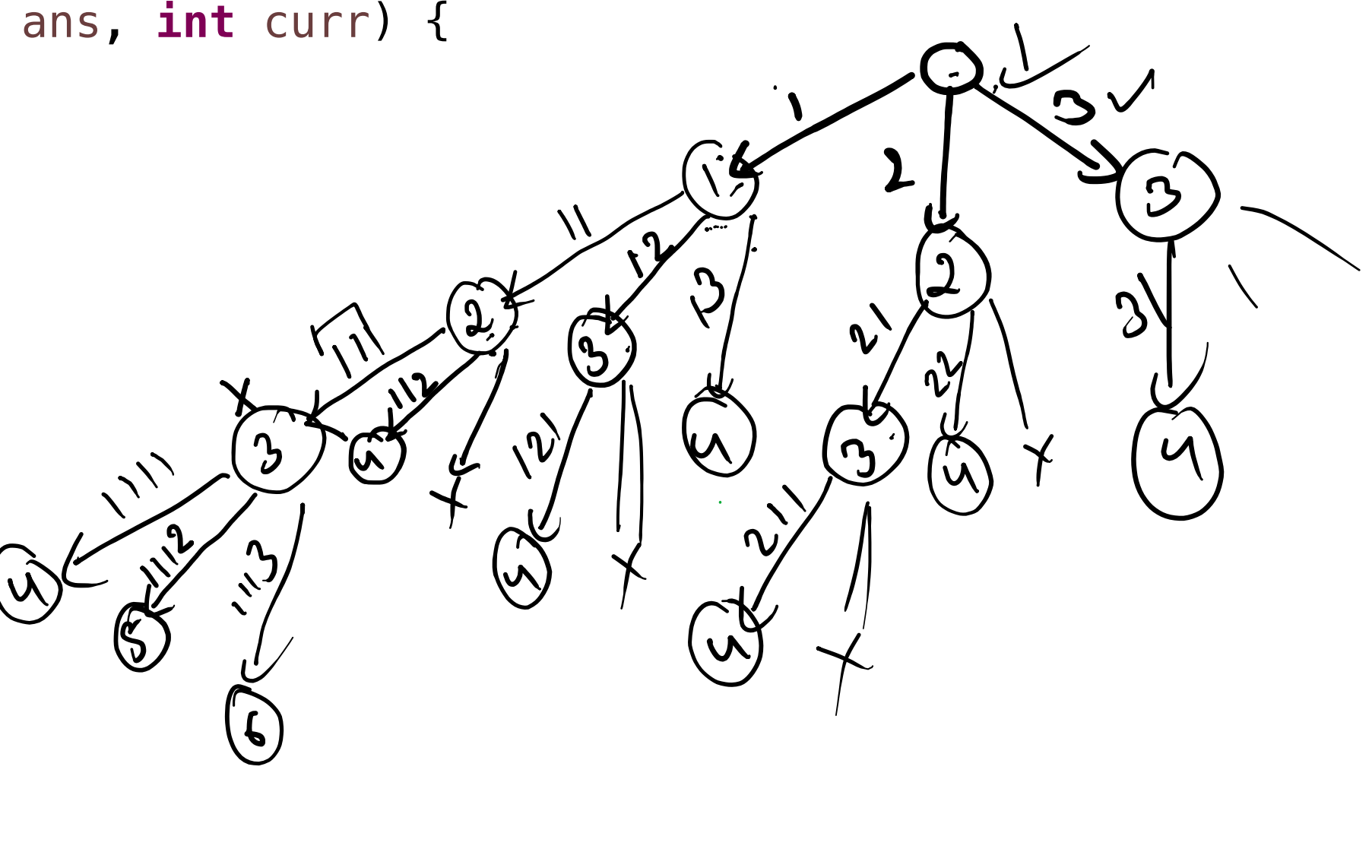


N=4

1111  
121  
112  
13  
22  
211  
31

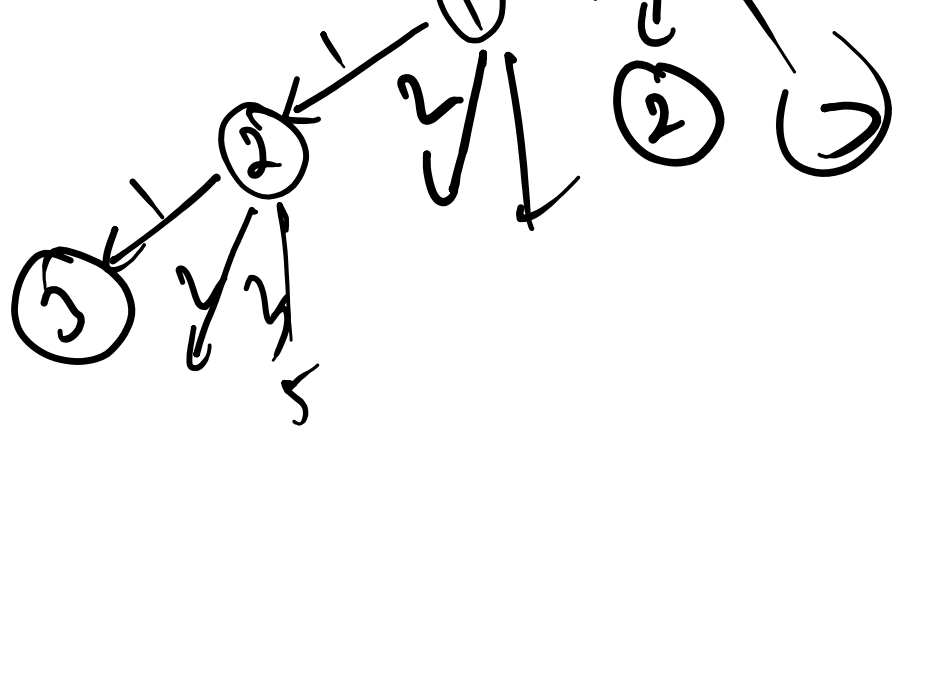
curr > end  
curr == end

```
public static void print(int n, String ans, int curr) {  
    if (curr == n) {  
        System.out.println(ans);  
        return;  
    }  
    if (curr > n) {  
        return;  
    }  
    print(n, ans + 1, curr + 1);  
    print(n, ans + 2, curr + 2);  
    print(n, ans + 3, curr + 3);  
}
```



n=3

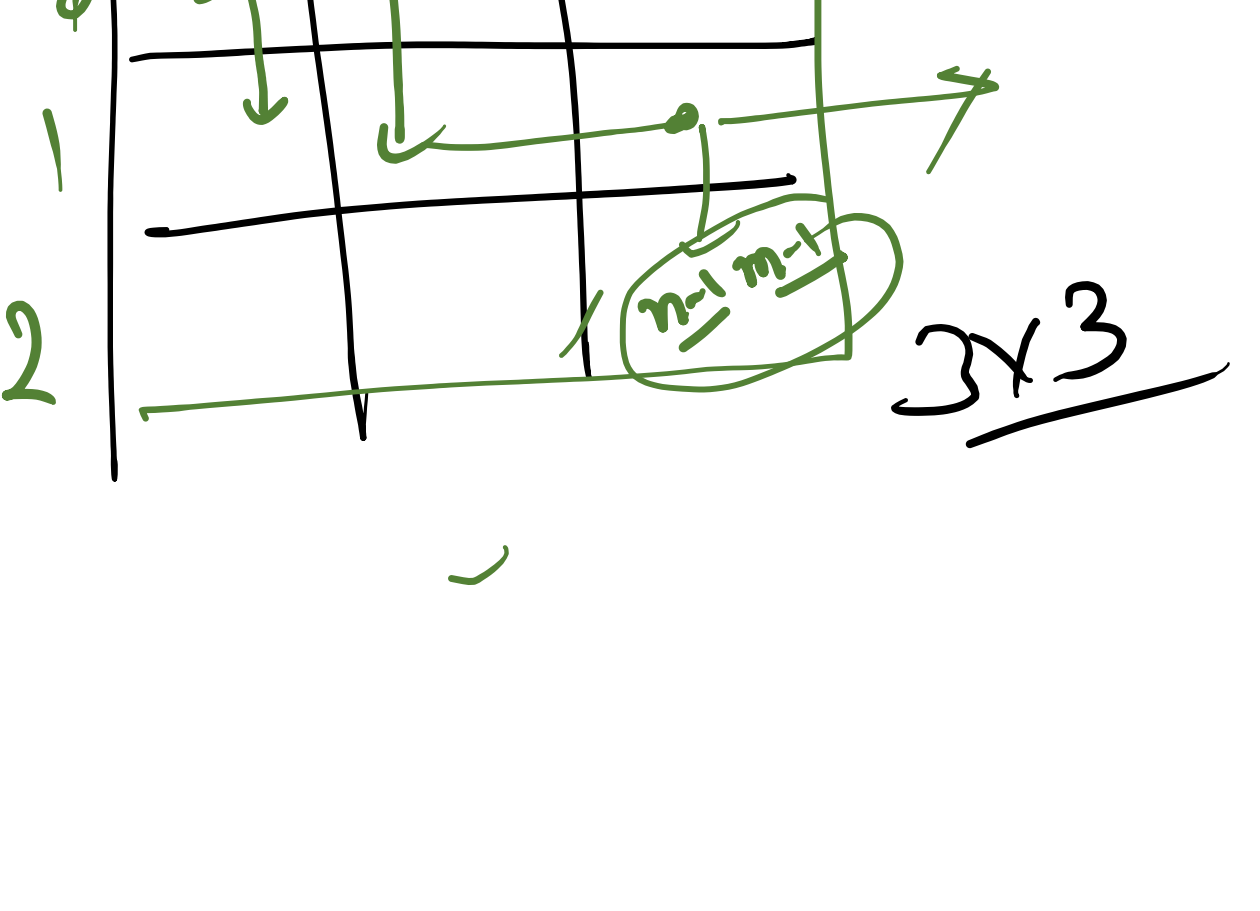
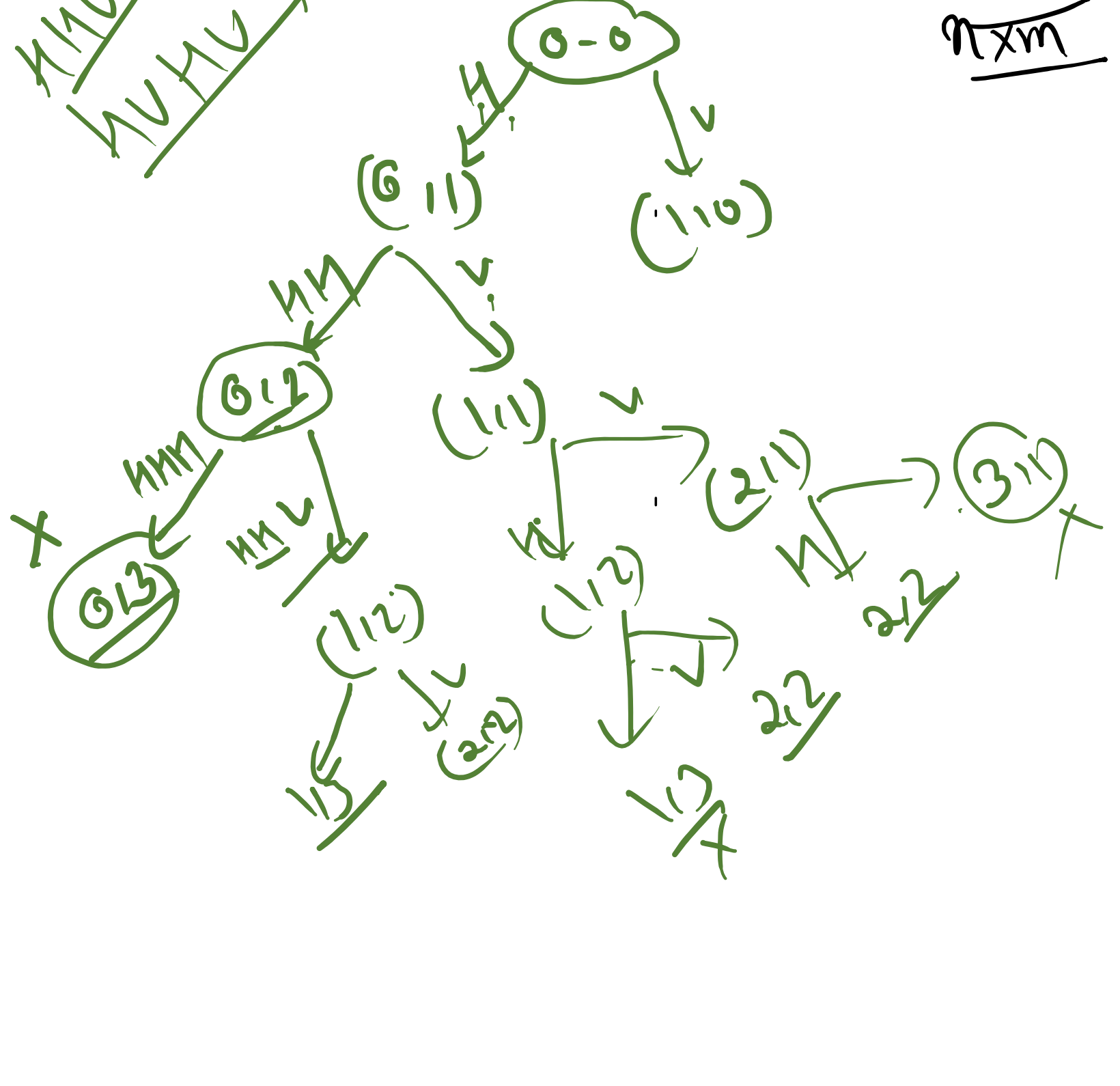
```
public static void print(int n, String ans, int curr) {  
    if (curr == n) {  
        System.out.println(ans);  
        return;  
    }  
    if (curr > n) {  
        return;  
    }  
    for (int dice = 1; dice <= 3; dice++) {  
        print(n, ans + dice, curr + dice);  
    }  
}
```



curr > 3  
curr == 3  
curr < 3

n=3  
curr=2  
ans=2  
dice=1  
P(3, 2, 1)

n=3  
ans=0  
curr=0  
dice=1  
P(3, 1, 1)  
P(3, 2, 2)  
P(3, 3, 3)



add  
remove  
set  
update  
size  
display