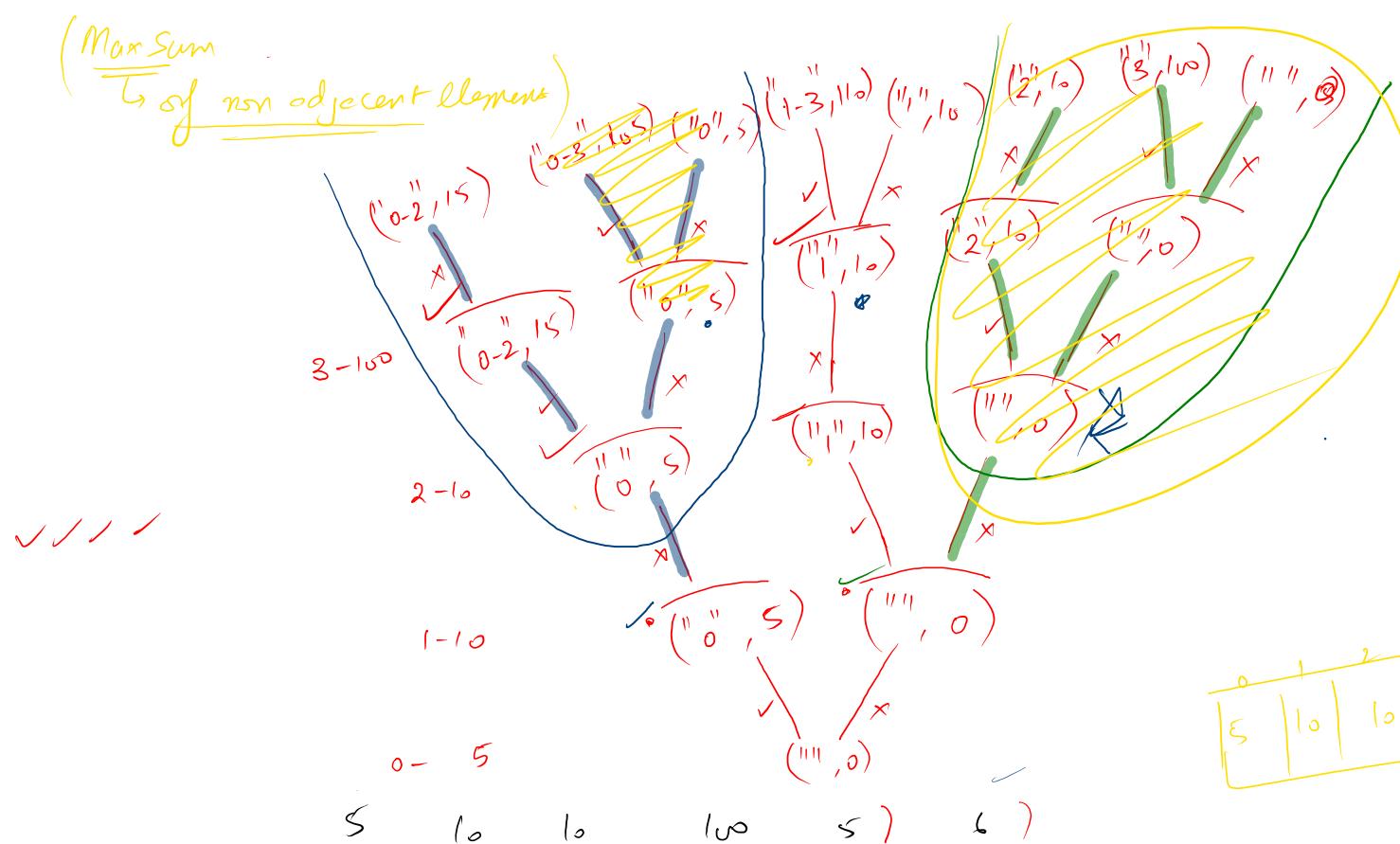
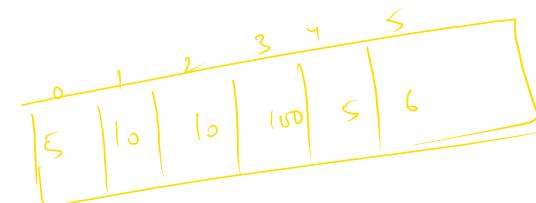
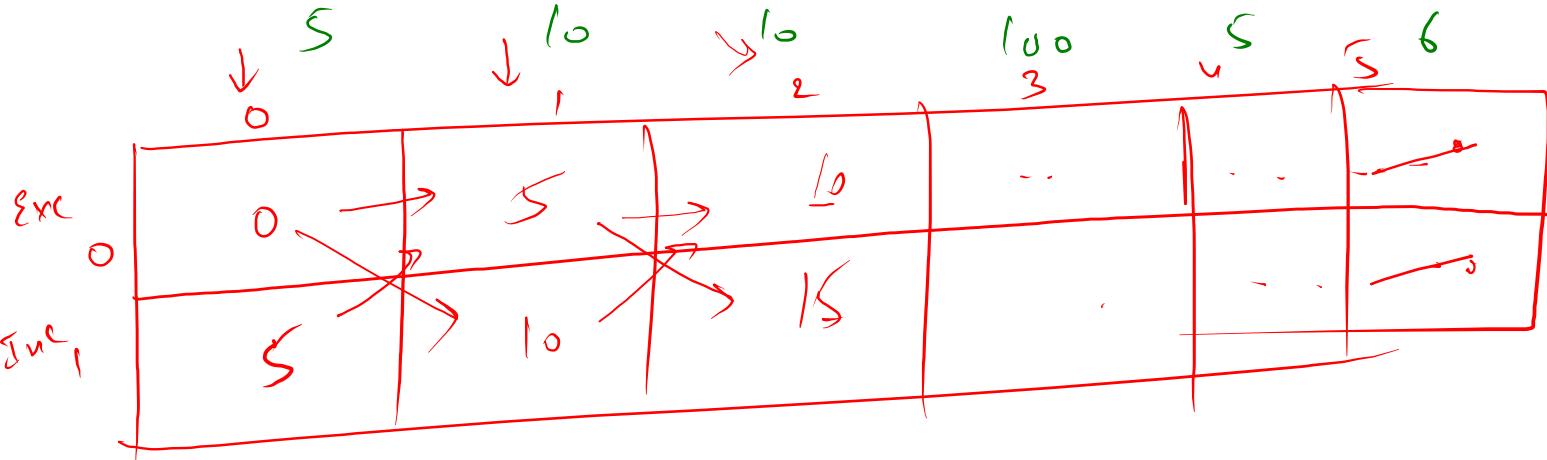


(MaxSum
of non adjacent elements)



| | - | 0-15 | 0--10 | 0-2- | -1-3- | 0-2-4 |
|-------|-------|------|-------|------|-------|-------|
| exc 0 | 0 → 5 | 5 | 10 | 15 | 100 | (110) |
| inc 1 | 5 | -1 | 10 | 15 | 110 | (110) |





```

int inc = 0 , exc = 0;

for(int i = 0 ; i < n ; i++){
    if(i == 0){
        exc = 0;
        inc = arr[0];
    }else{
        int newExc = Math.max(exc,inc);
        int newInc = exc + arr[i];

        inc = newInc;
        exc = newExc;
    }
}

int mSum = Math.max(inc,exc);
System.out.println(mSum);
    
```

exc or 10

inc or 15

$$a+b+c = \left(\begin{array}{c} + \\ \hline \end{array} \right) \text{ degex}$$

Count of $a+b+c$ type subsequences

~~$a+b+c$~~

~~bcc~~

0 1 2 3 4

$a a'$

a

$a a'$

(a')

a'

$$(a+) = 2.(a+) + 1$$

$$(a+b+) = 2.(\overline{a+b+}) + (\underline{a+})$$

$$(a+b+c+) \Rightarrow 2.(\overline{a+b+c+}) + (\underline{a+b+})$$

(b')

c'

| $a+$ | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|----------|---|---|---|---|---------------|---------------|---|
| $a+b+$ | 0 | 0 | 1 | 1 | $\frac{1}{2}$ | $\frac{1}{2}$ | 5 |
| $a+b+c+$ | 0 | 0 | 0 | 1 | 1 | 1 | 7 |
| | | | | | | | ? |

↓ ↓ ↓

a b c a' b' c'

| | | | | | | |
|----------|---|---|---|---|---|---|
| $a+$ | 1 | 1 | 1 | - | - | - |
| $a+b+$ | 0 | 1 | 1 | - | - | - |
| $a+b+c+$ | 0 | 0 | 1 | - | - | - |



```

int countOfa = 0 , countOfab = 0 , countOfabc = 0;
for(int i = 0 ; i < str.length() ; i++){
    char ch = str.charAt(i);

    if(ch == 'a'){
        countOfa = (2*countOfa) + 1;
    }else if(ch == 'b'){
        countOfab = (2*countOfab) + countOfa;
    }else if(ch == 'c'){
        countOfabc = (2*countOfabc) + countOfab;
    }
}

System.out.println(countOfabc);

```

Count of $a+$ = ϕ 1

Count of $a+b+$ = ϕ 1

Count of $a+b+c+$ = ϕ 1

minimum pointing

$\begin{array}{c} \downarrow \\ 4 \\ 157 \\ 584 \\ 329 \\ 124 \end{array}$

Such that
 no two adj-
 hours may have
 same color

| | 0 | 1 | 2 |
|-------|---|---|---|
| Red | 1 | 5 | 7 |
| Blue | 5 | 8 | 4 |
| Green | 3 | 2 | 9 |
| | 1 | 2 | 4 |

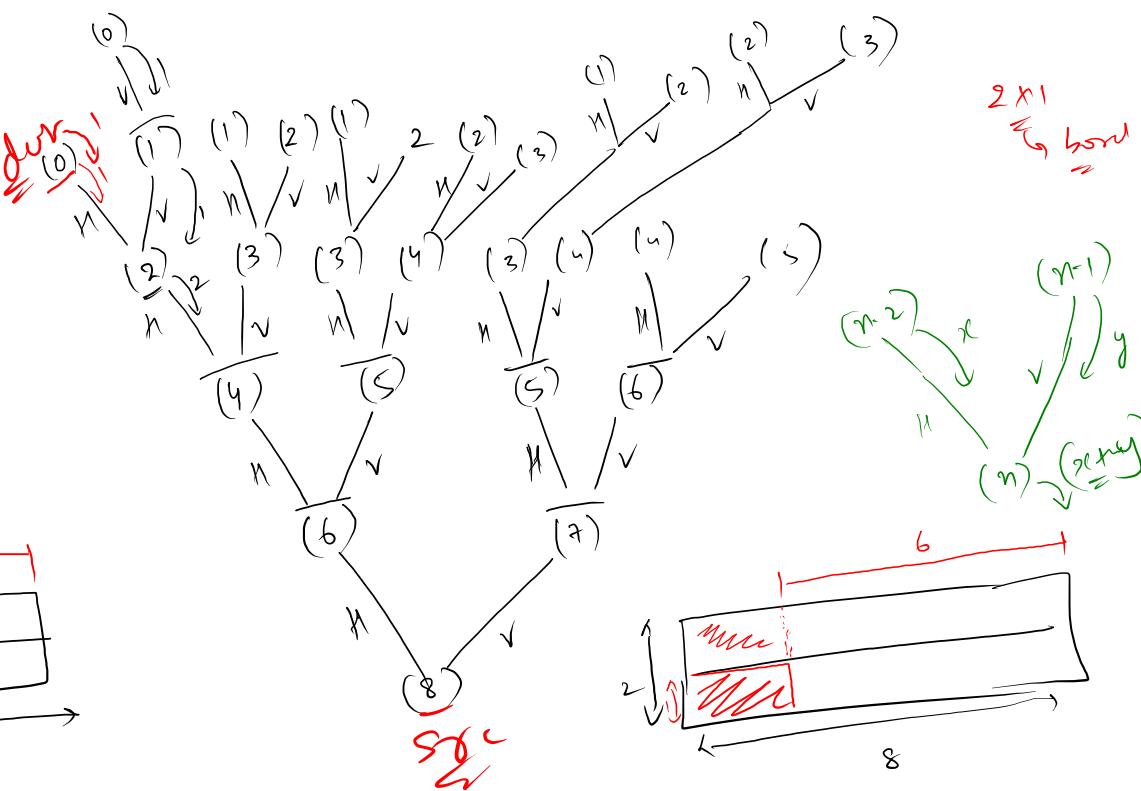
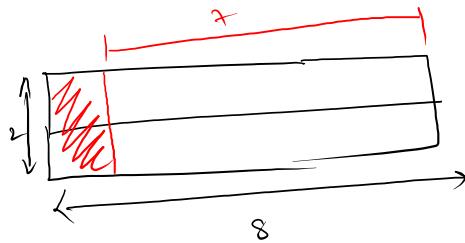
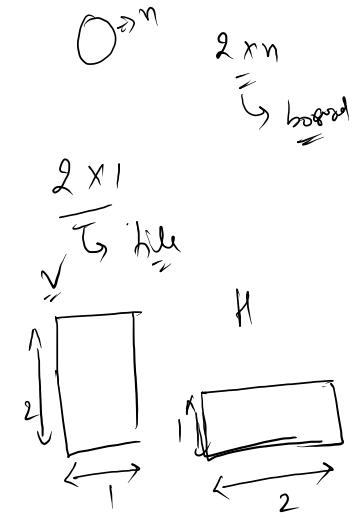
| R | B | G |
|---|---|---|
| 0 | 1 | 2 |
| 1 | 2 | 3 |
| 2 | 3 | 1 |
| 3 | 1 | 2 |

| c_1 | c_2 | c_3 | c_4 |
|-------|-------|-------|-------|
| 0 | 1 | 2 | 3 |
| 5 | 1 | 2 | 9 |
| 13 | 6 | 7 | 8 |
| 2 | 4 | 5 | 1 |
| 1 | 1 | 1 | 1 |
| 2 | 6 | 2 | 4 |

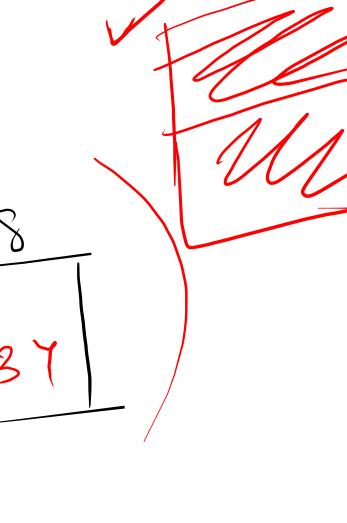
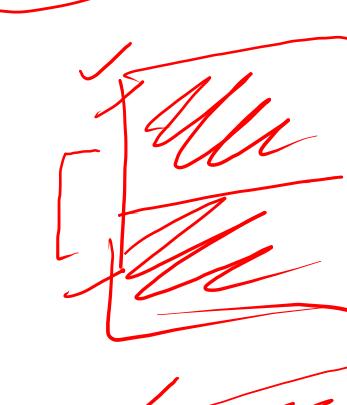


| c_1 | c_2 | c_3 | c_4 |
|-------|-------|-------|-------|
| 0 | 1 | 2 | 3 |
| 5 | 1 | 2 | 9 |
| 14 | 8 | 8' | 9 |
| 10 | - | - | - |
| 1 | - | - | - |
| 2 | - | - | - |
| 3 | - | - | - |
| 1 | - | - | - |
| 2 | - | - | - |
| 3 | - | - | - |
| 1 | - | - | - |
| 2 | - | - | - |
| 3 | - | - | - |

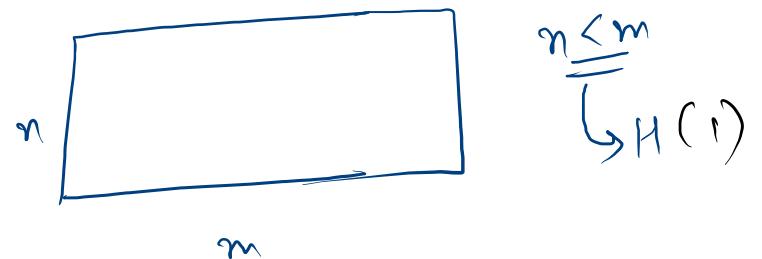
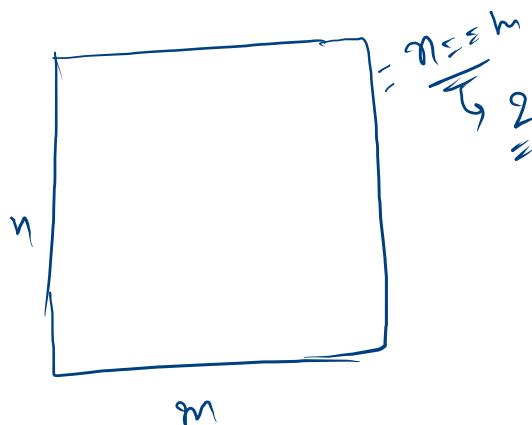
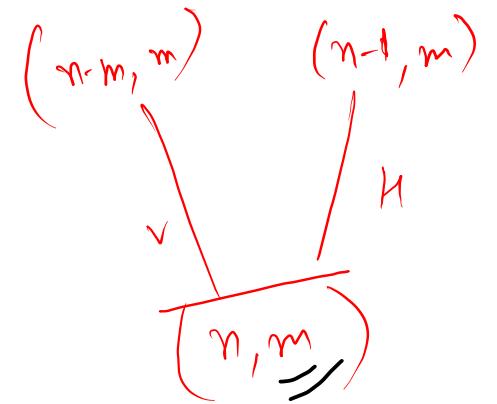
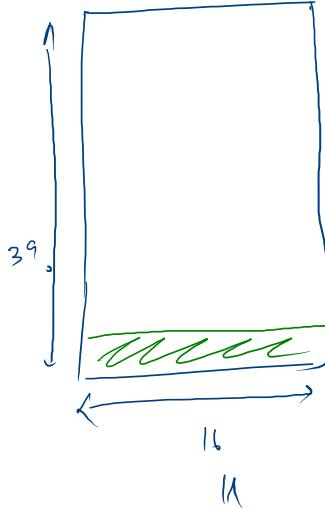
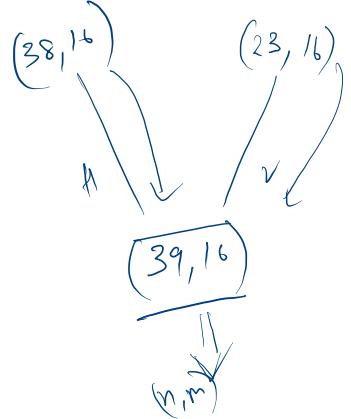
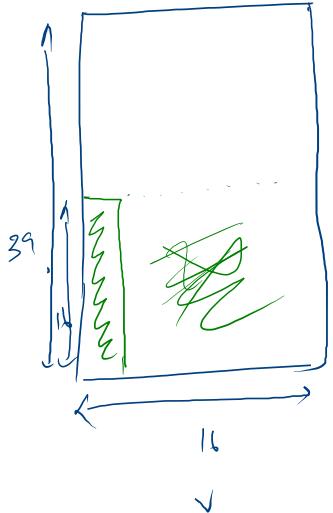
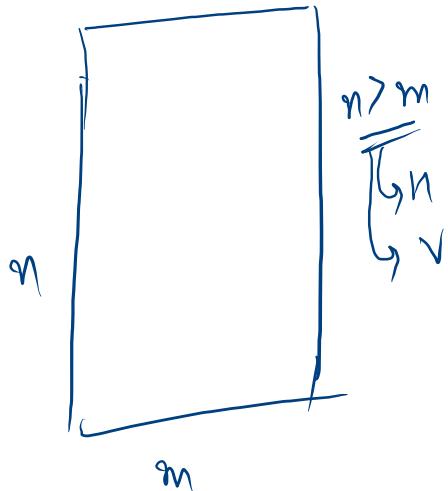
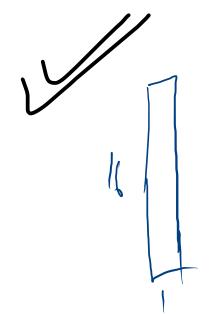
min
-/-



$H \cdot W$



| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|----|----|----|
| 1 | 1 | 2 | 3 | 5 | 8 | 13 | 21 | 37 |



- </> Count A+b+c+ Subsequences
- </> Tiling With 2 * 1 Tiles
- </> Tiling With M * 1 Tiles
- ~~</> Arrange Buildings~~
- </> Maximum Sum Non Adjacent Elements
- </> Paint House
- </> Paint House - Many Colors

$n \rightarrow 39$
 $m \rightarrow 16$

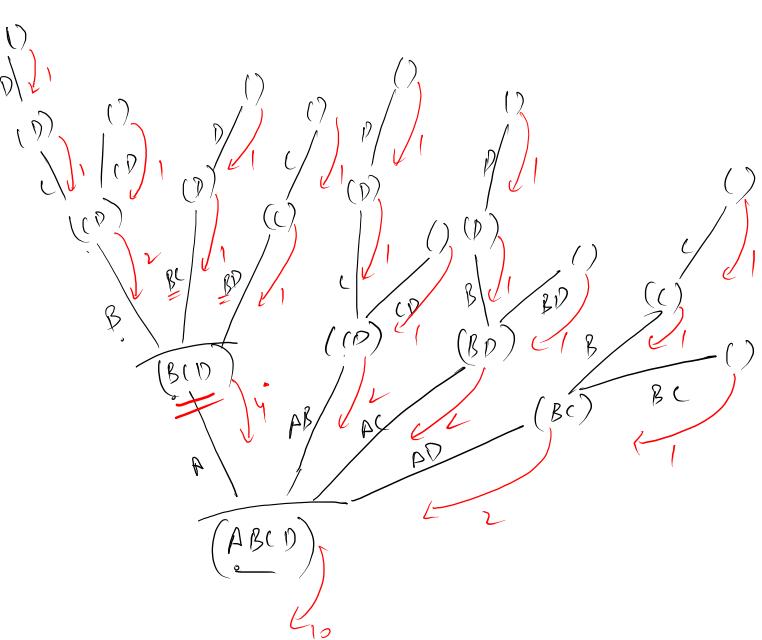
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |

| | | | | | | | | | | | | | | | | |
|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 |
| (3) | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 22 |

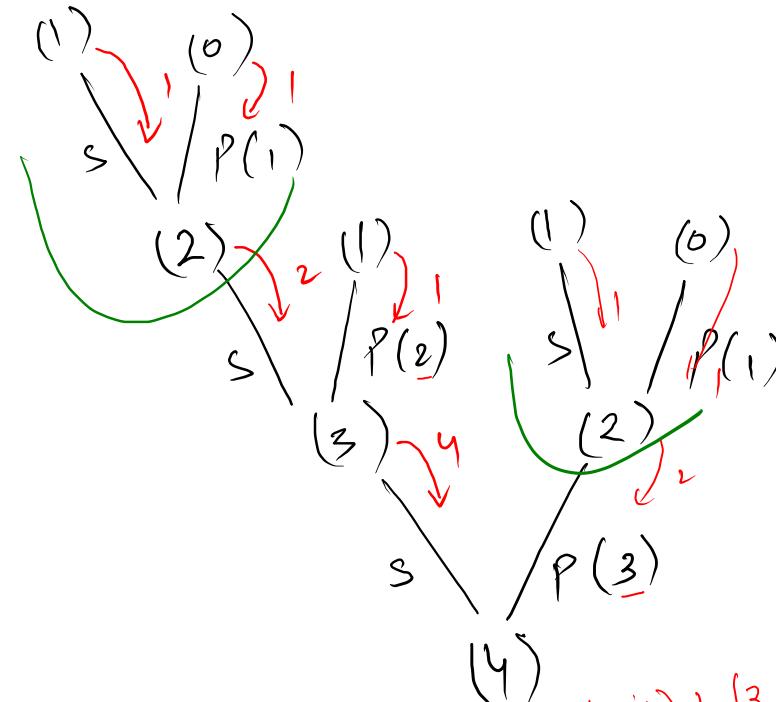
| | | | | | |
|----|----|------|----|----|--------|
| 34 | 35 | 36 | 32 | 38 | 39 |
| 26 | 31 | (37) | 44 | 52 | (61) ✓ |

61 Why?

$(n-m, m)$ $(n-1, m)$
↓ ↓
 \backslash \backslash
 (n, m)



$A - B - C - D$
 $A - B - CD$
 $A - BC - D$
 $A - BD - C$
 $AB - C - D$
 $AB - CD$
 $AC - B - D$
 $AC - BD$
 $AD - B - C$
 $AD - BC$



$$(1 \cdot 4) + (3 \cdot 2)$$

\Rightarrow

$$4 + (3 \cdot 2)$$

| | | | | |
|---|---|---|---|----|
| 0 | 1 | 2 | 3 | 4 |
| 1 | 1 | 2 | 4 | 10 |

$\overbrace{1 \quad 2 \quad 3 \quad 4 \quad \dots \quad n}^{n+1}$ $(n+1)$
 $s \swarrow \quad \searrow P(n-1)$
 (n)
 $d_p[n] \rightarrow d_p[n-1] + (n-1) \cdot d_p[n-2]$

- </> Count A+b+c+ Subsequences ✓
- </> Tiling With 2 * 1 Tiles ($N \cdot w$)
- </> Tiling With M * 1 Tiles ✓
- </> ~~Anagram Buildings~~
- </> Maximum Sum Non Adjacent Elements ✓
- </> Paint House ✓
- </> Paint House - Many Colors ($N \cdot w$)
- </> Friends Pairing ($N \cdot w$)