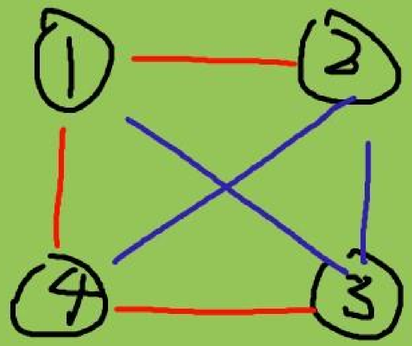
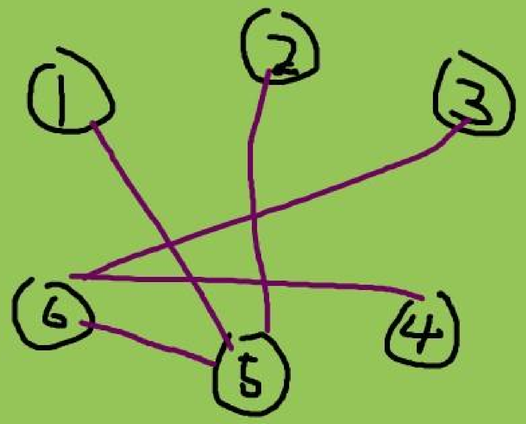
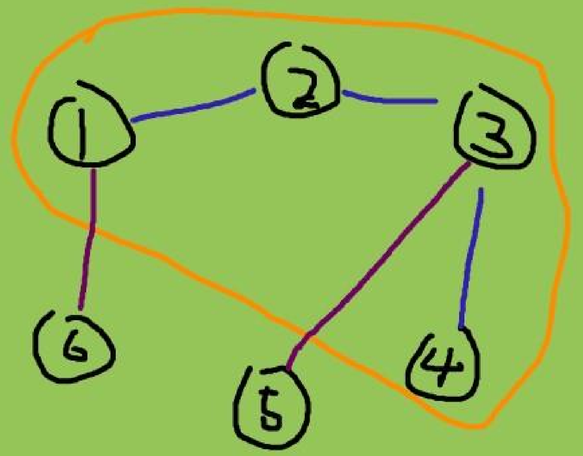
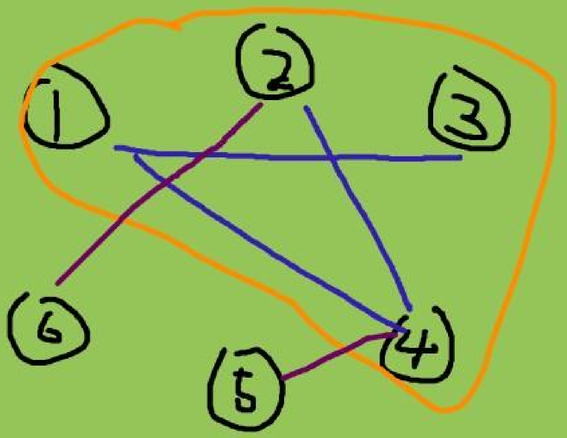
n=4

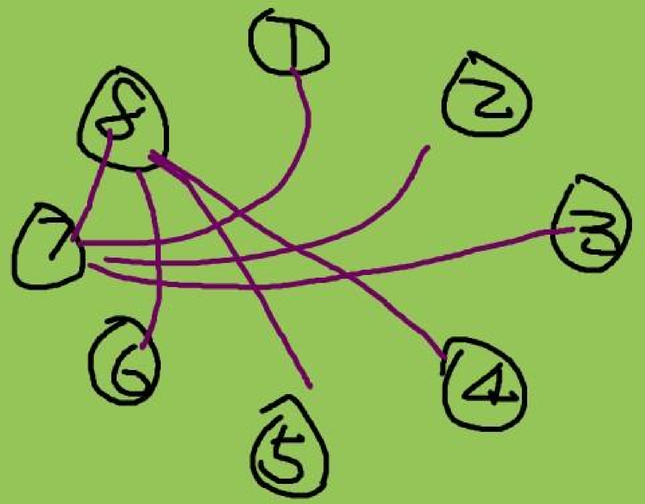


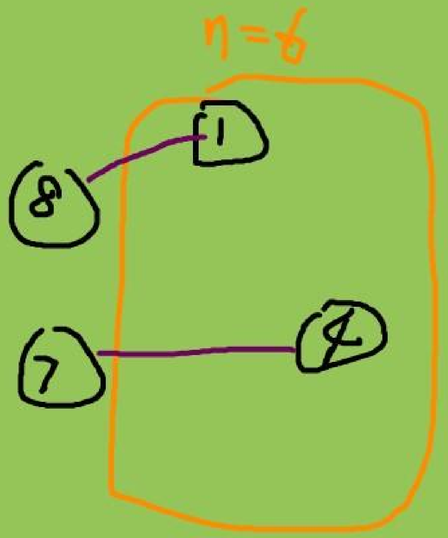
n=6

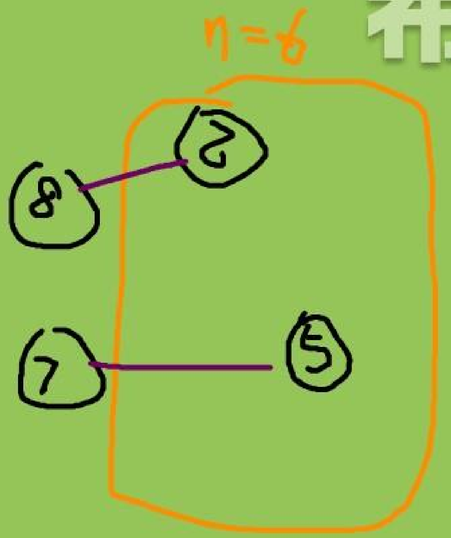


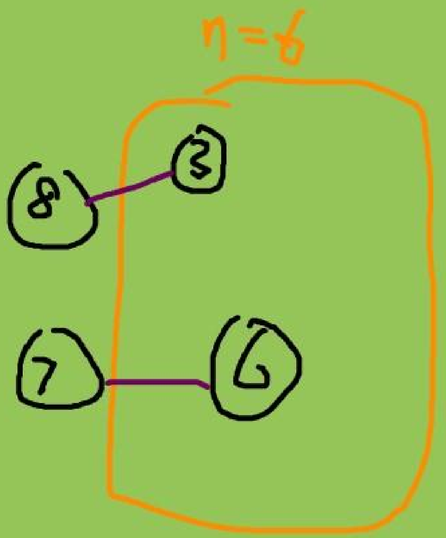






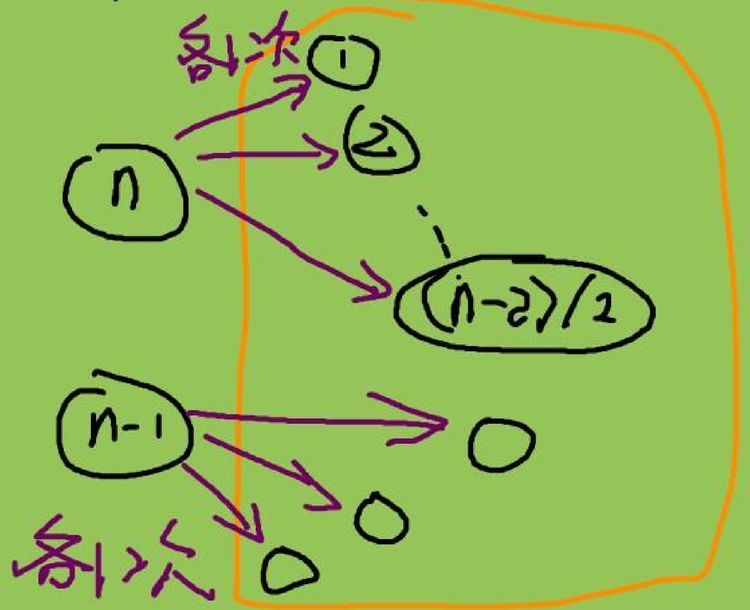


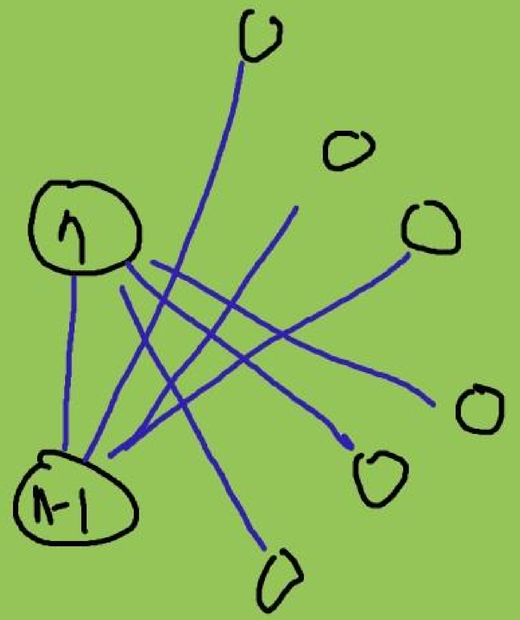


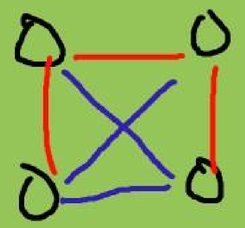


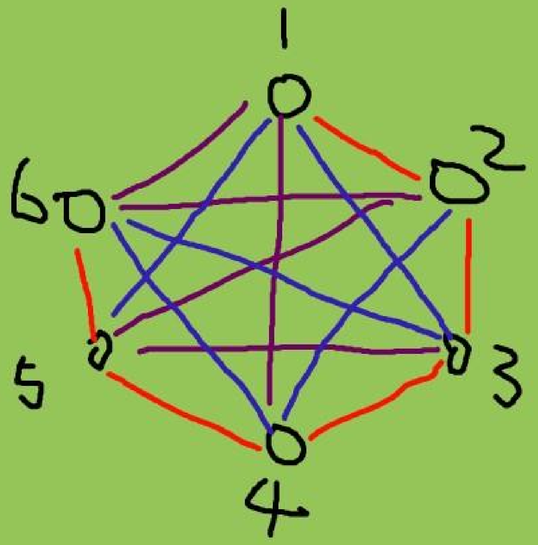
$n \longrightarrow n-2$

原有 $(n-2)/2$ 个 n 当叶 $n-1$





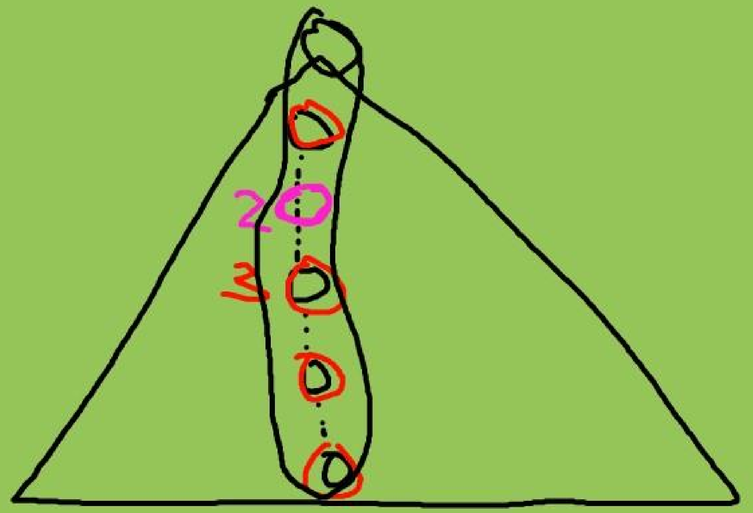


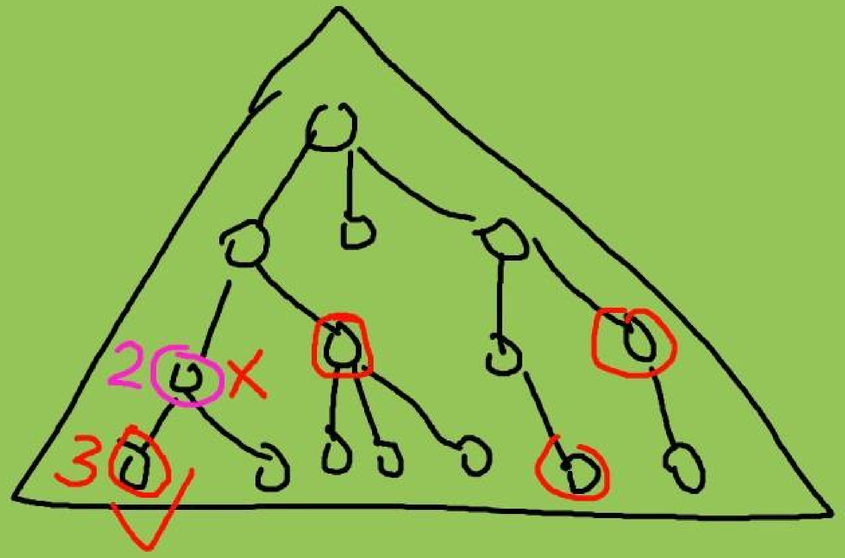


1-2-3-4-5-6

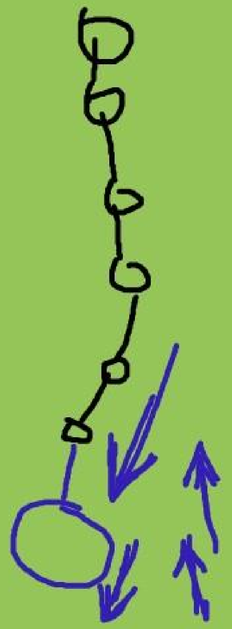
5-1-3-6-4-2

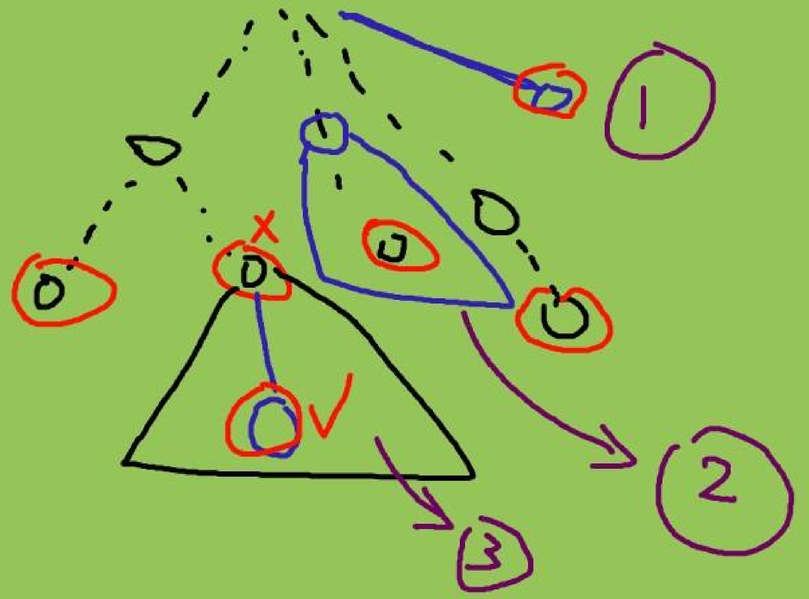
3-5-2-6-1-4

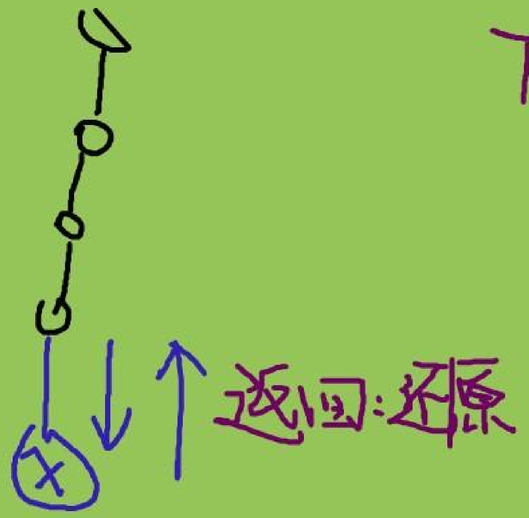




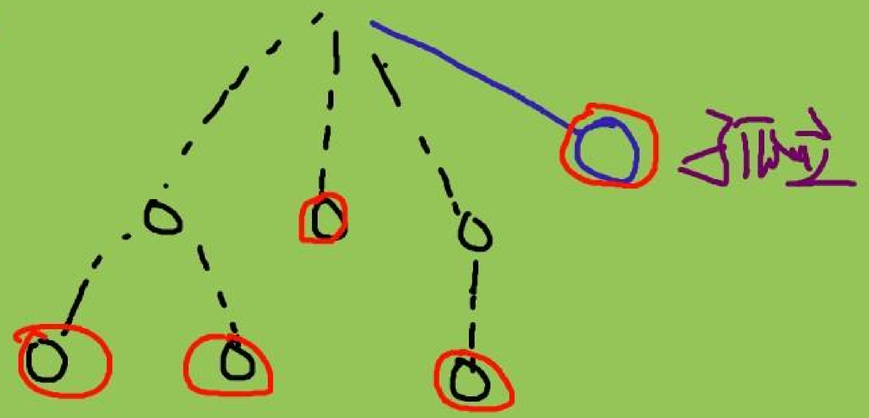
DFS







T2: (1)



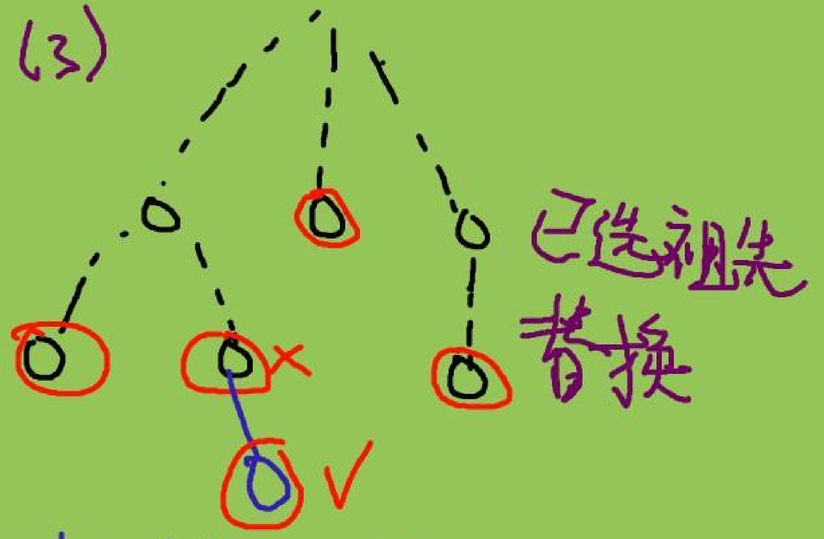
已选: 无祖后

Set

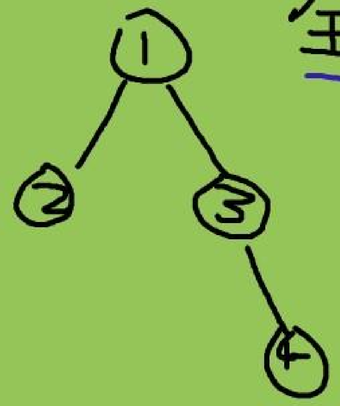
(2)

查 dfn[x] 后继

(3)



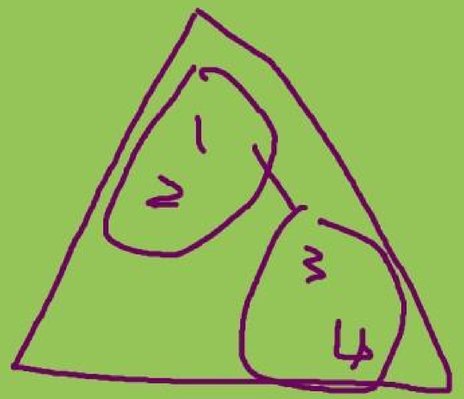
查 dfn[x] 前驱



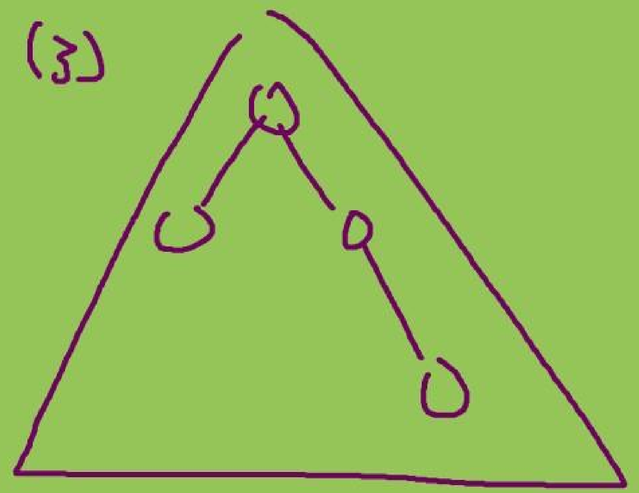
全Qi=1

(1)

(2)

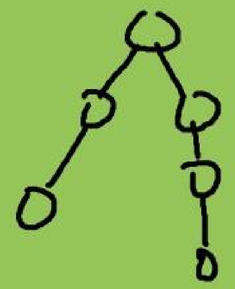


(3)



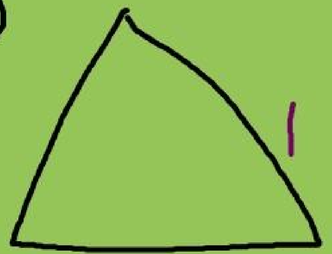
(4)

$n=6$ $a_i=1$



$x=1.2.3.6$

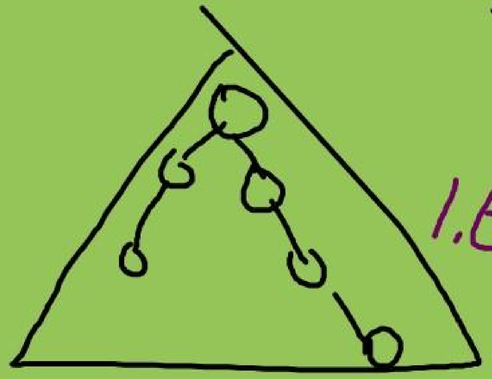
(1)



(2)

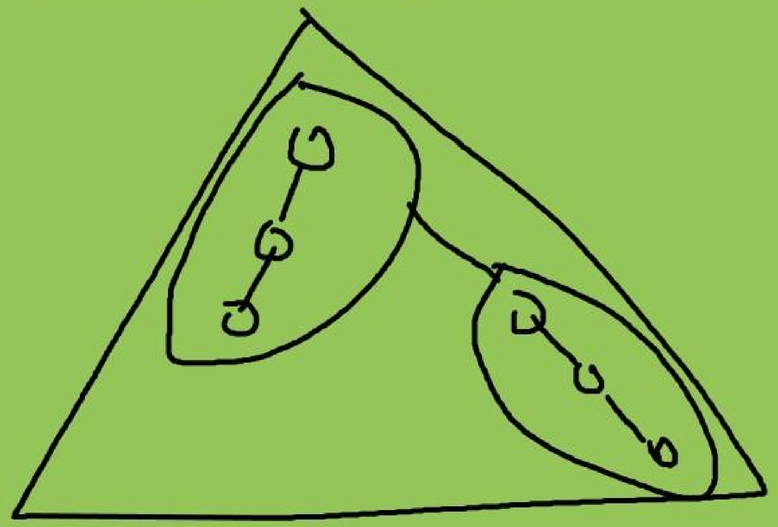
(3)

(4)

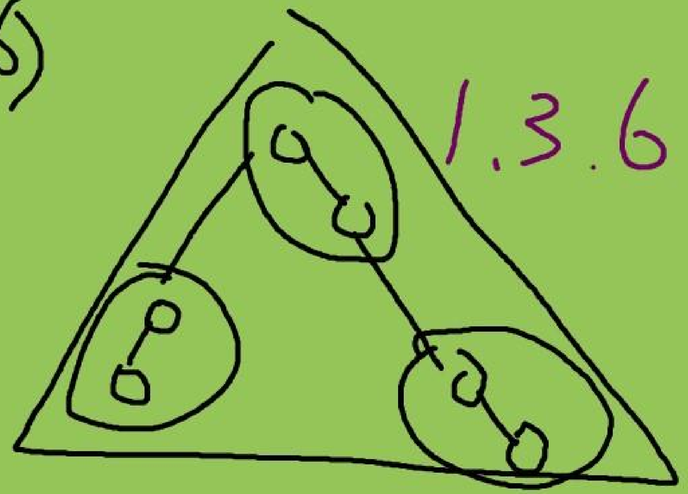


(5)

1.2.6

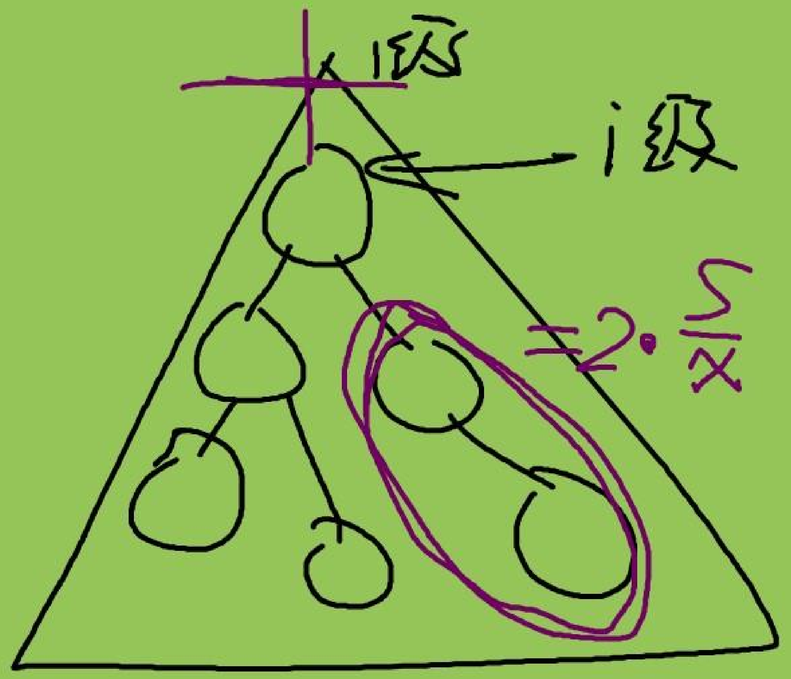


(6)



$x_1=1$

$x_i \mid x_{i+1}$



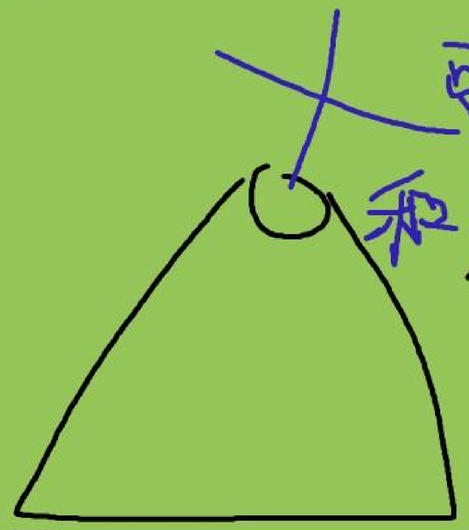
x个

x | S

遍历

$S = \sum a_i$

每个i级 $\sum a_i = S/x$



可断的边 x-1条

和是 S/x 的倍

子树对根 $s_i = \sum a_i$

看 s_i 是 S/x 的倍数

是否有x个

- < x个 不行
- = x 可
- > x 不可能

x=1.2.·····n

是否可行

若 s_i 是 S/x 的倍数 $\longrightarrow$ $f[x]++$

$\Downarrow$

单位区域 S/x $\Big|$ $\gcd(s_i, S)$

$x \Big| \dfrac{S}{\gcd(s_i, S)}$

先：枚 s_i $\left(x_0 = \dfrac{S}{\gcd}\right)$ $f[x_0]++$

再：枚 x 倍 $f[x] += f[\text{倍}]$

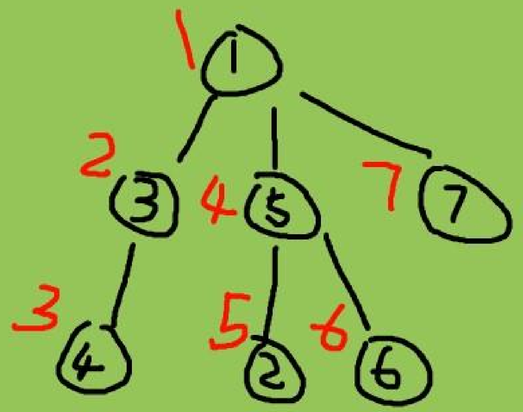
$O(n \log n)$

$f[x] == x \Rightarrow$ 某级 x 块 可行

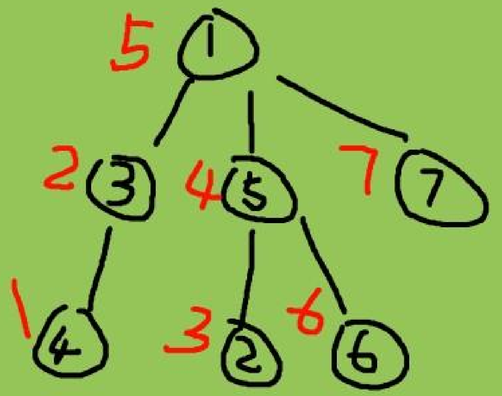
$g[x]$：以 x 结尾

$g[x] = \sum g[\text{约}]$

$O(n \log n)$



初DFS



给你

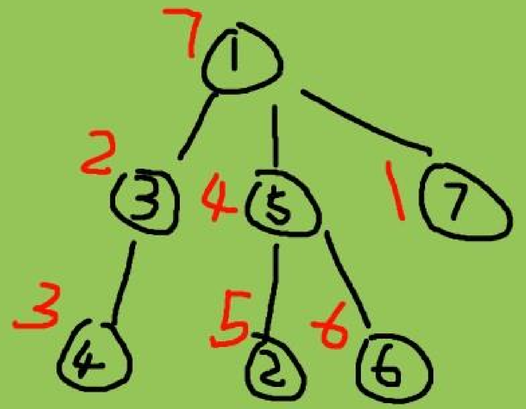
output

O(n²)

Yes

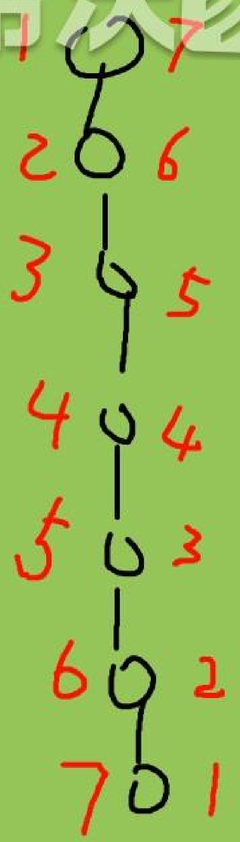
6

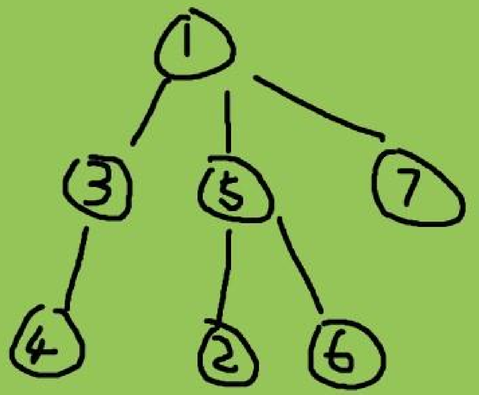
原a....

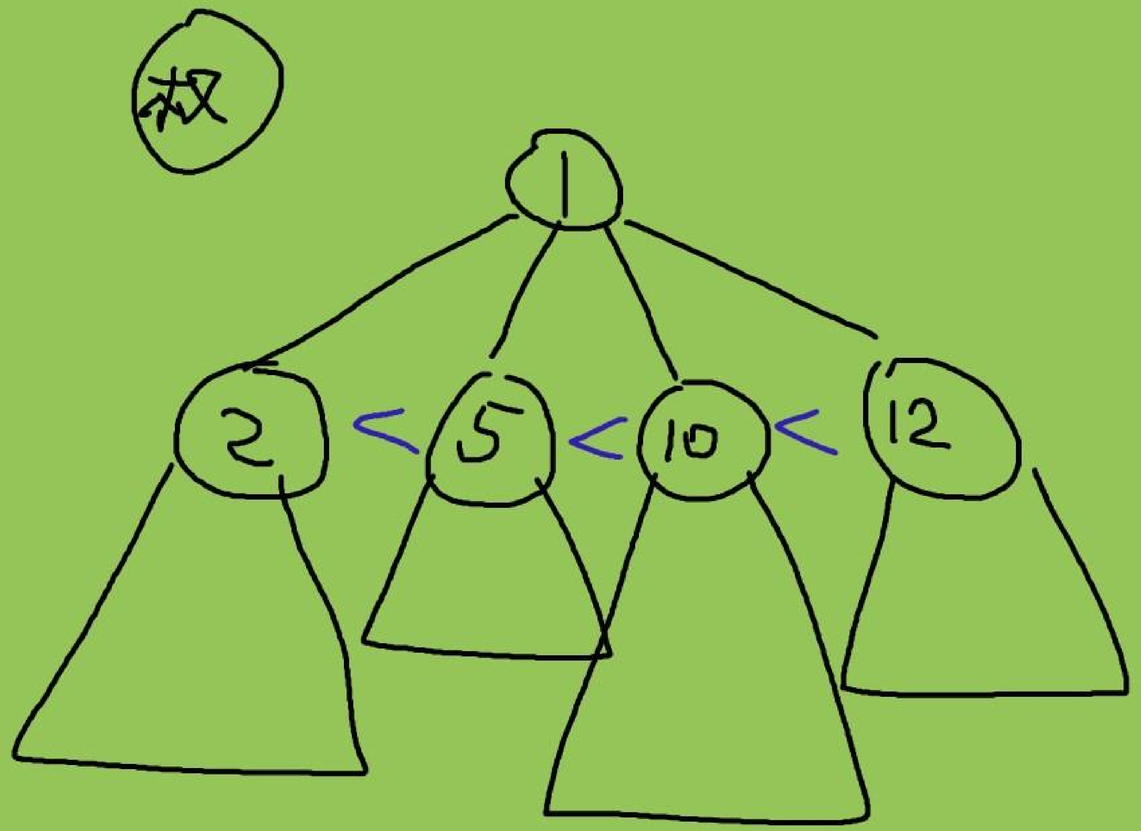


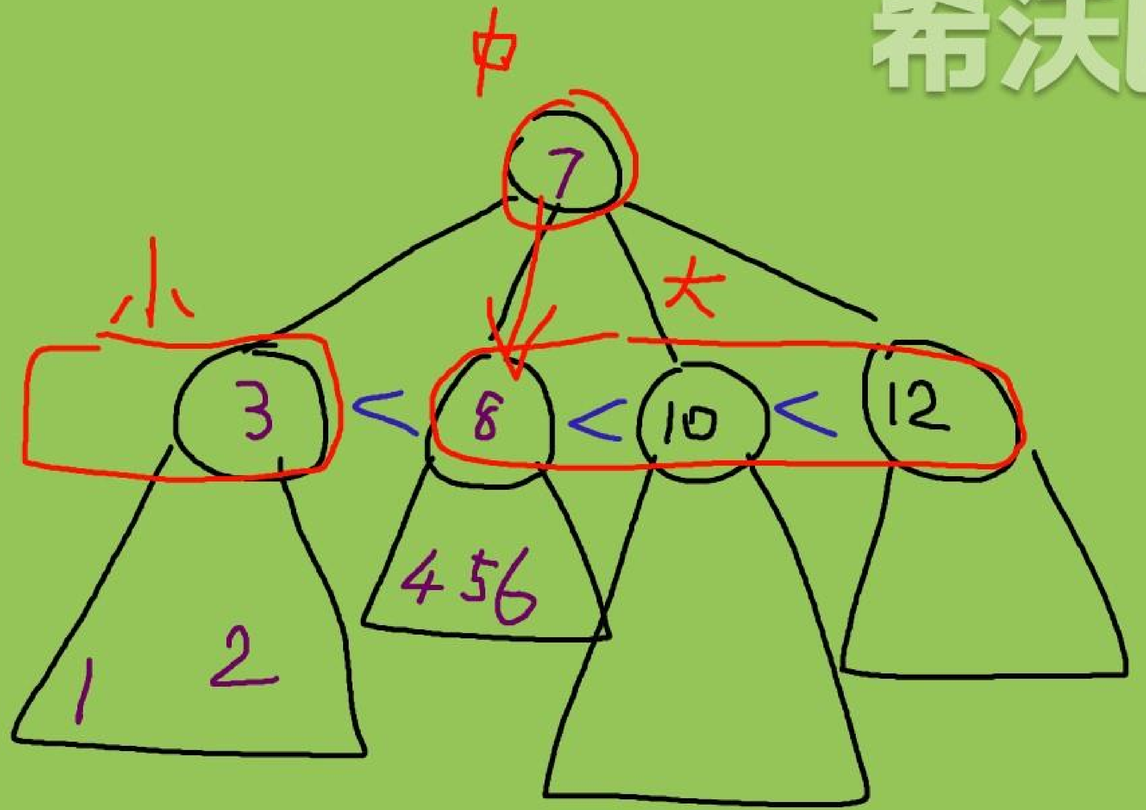
结体.

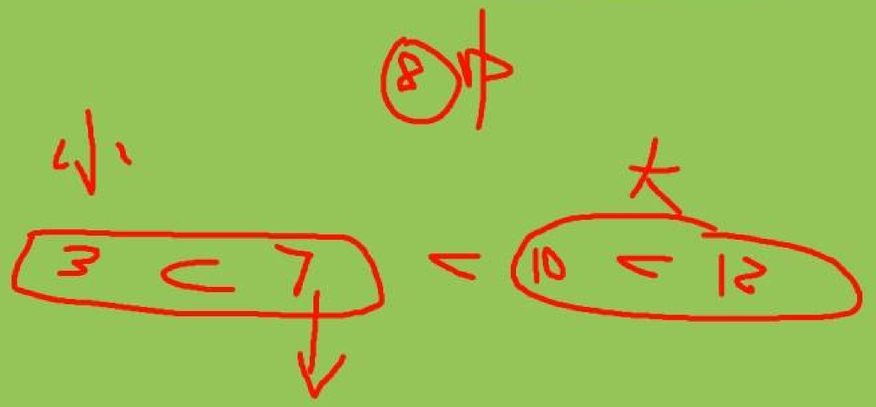
No

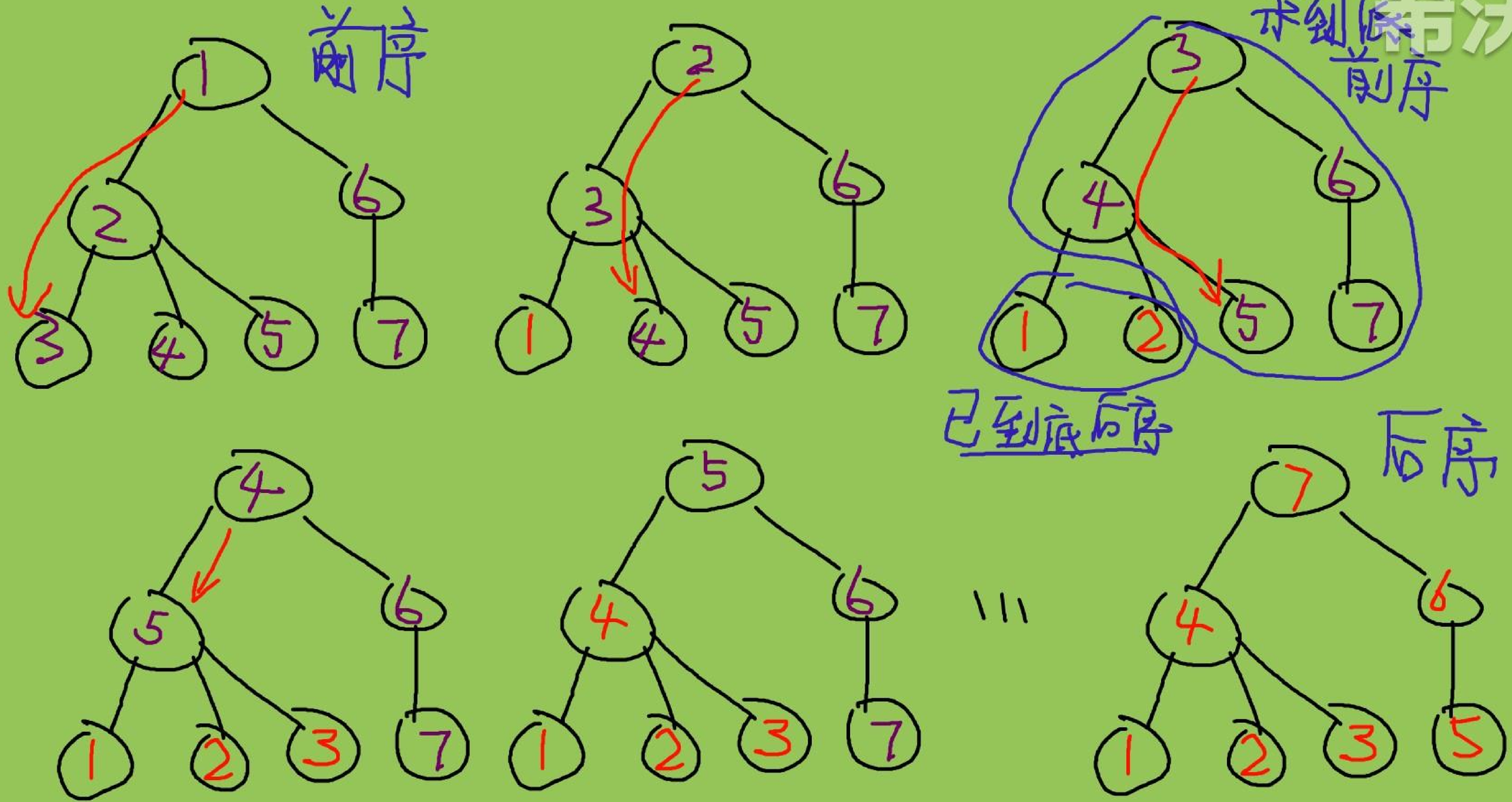


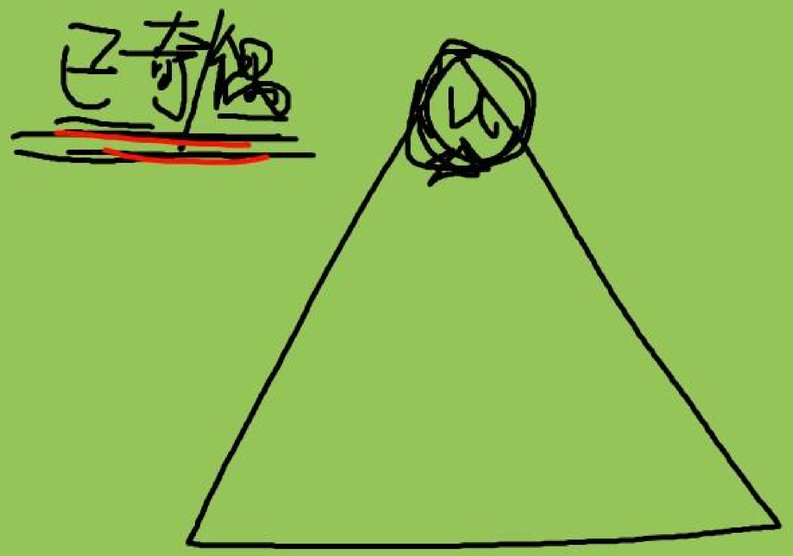


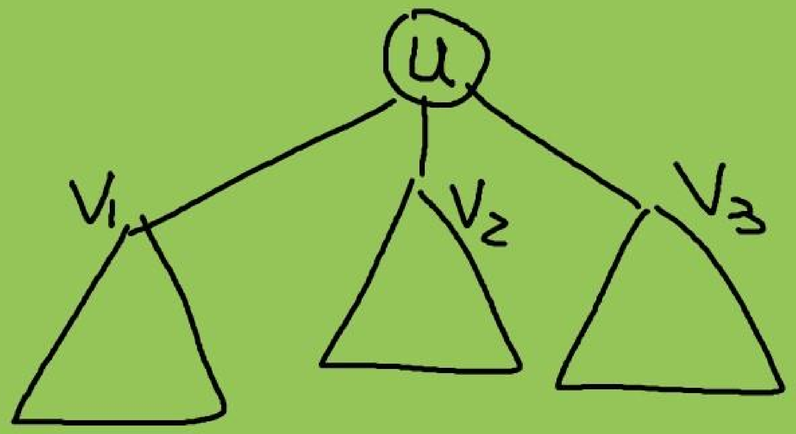




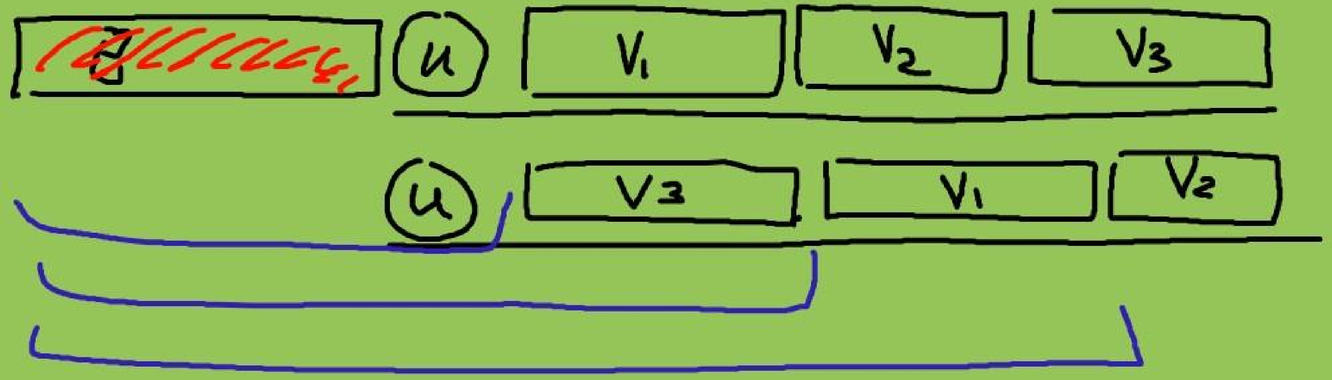



前序
求到底前序
已到底后序
后序



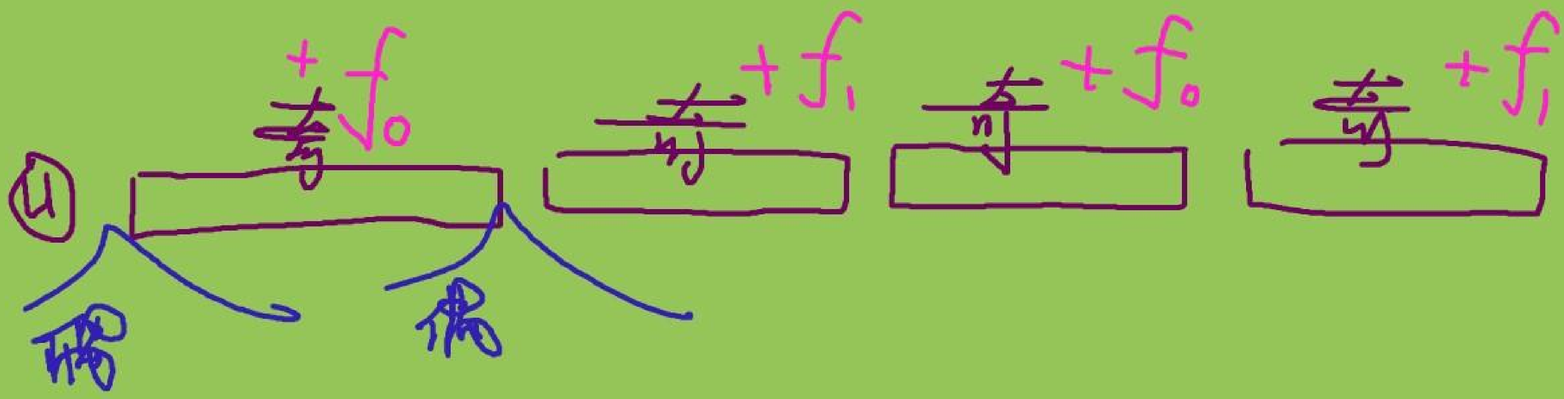


问题：儿子顺序 $S[v_i]$ 有关



(1) 儿子串 $S[v_i]$ 全偶 顺序无关 ……

(2) 有奇



偶儿子 f_0 f_1 选 $\min(f_0, f_1)$

奇儿子 f_0 和 f_1 各选多少个 ✓

先全 f_0 再调 $+=(f_1-f_0)$ ↪ 最小的 k 个

全 f_1 ……

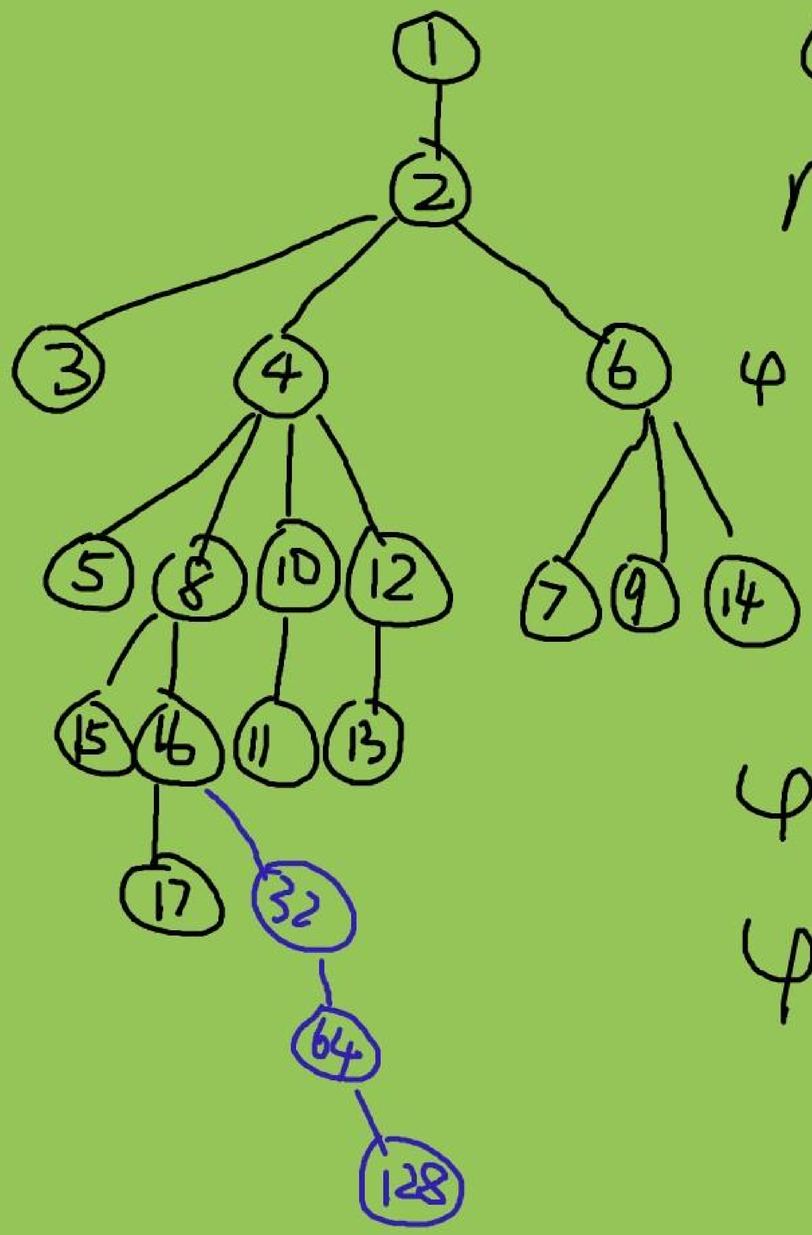
全 min ……

$O(n\log n)$

sort ✓

nth_element ✓

$O(n)$



$p_1 = 2$

$n = p_1^{q_1} p_2^{q_2} \cdots p_k^{q_k}$

$\varphi = (p_1 - 1) p_1^{q_1 - 1} \cdots$

1 保留 | 减2

$\varphi(1) = 1$

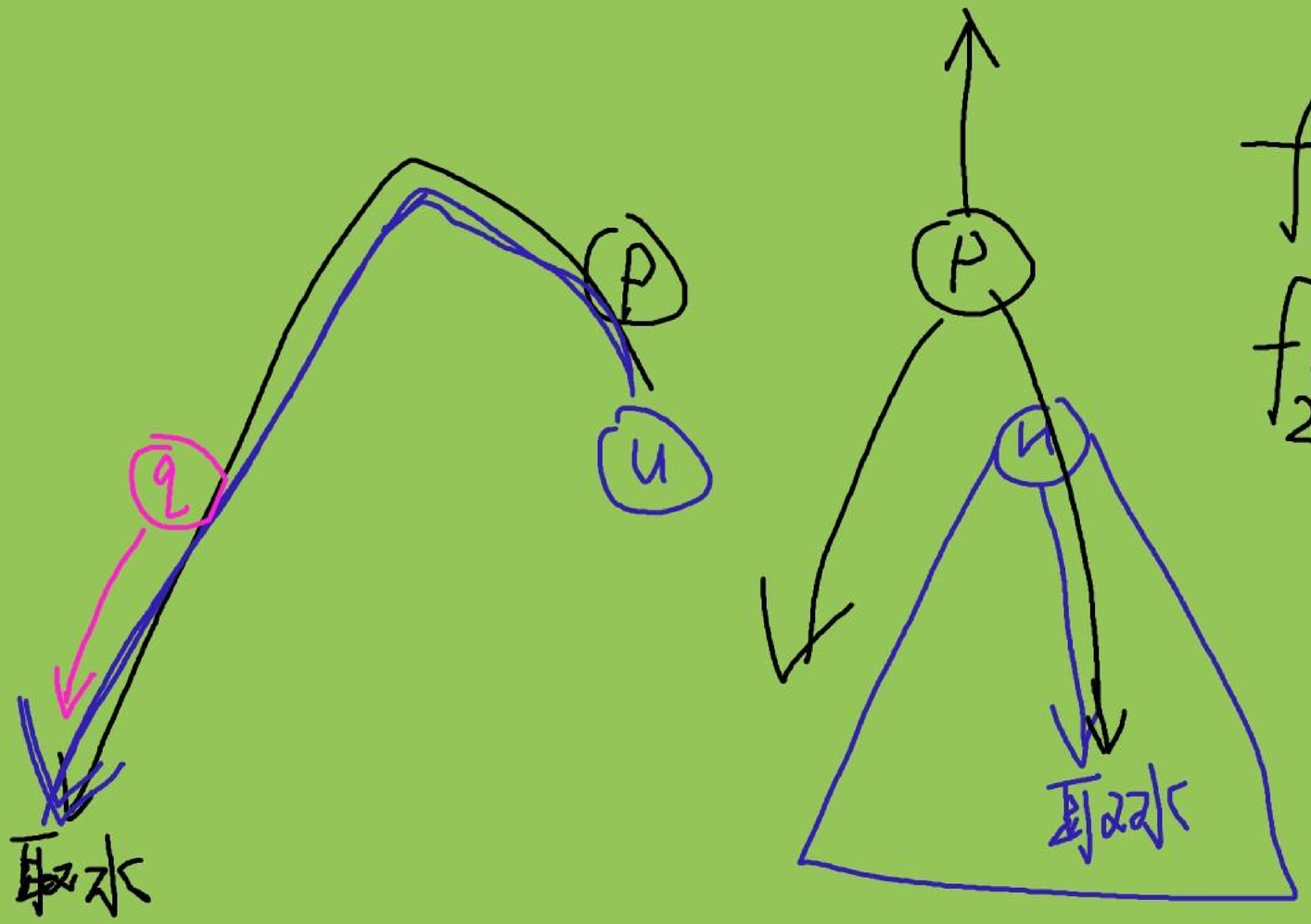
$\varphi(n) \in [1, n-1]$

2.4.6 : $+C_0 \times 3$

1.3.5.7.9 : $+C_1 \times 6$

$\varphi(\text{奇}) = \text{保留}$

$\varphi(\text{偶}n) \leq \frac{n}{2}$



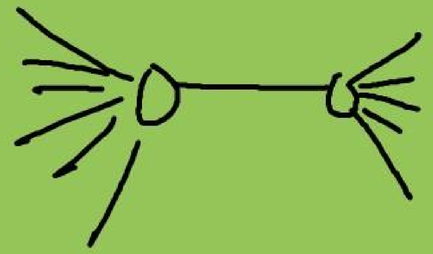
$d \geq 1$

$f_1[u][d]$ 外距d

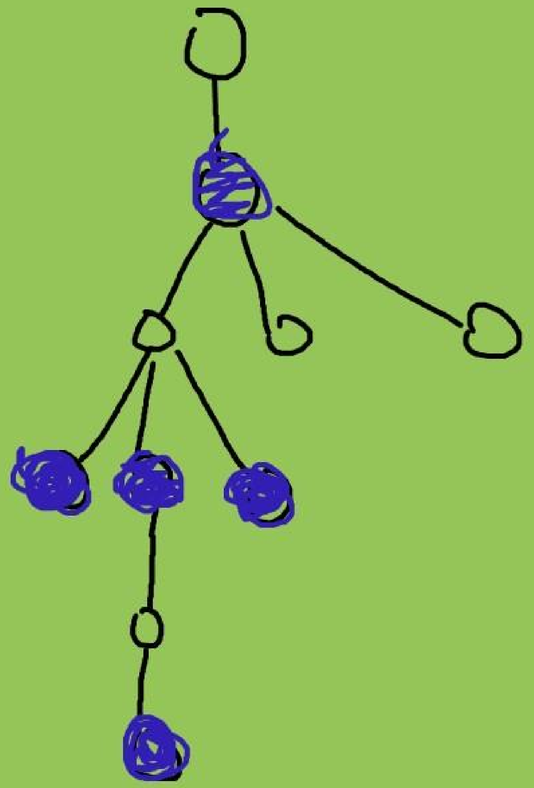
$f_2[u][d]$ 内距d

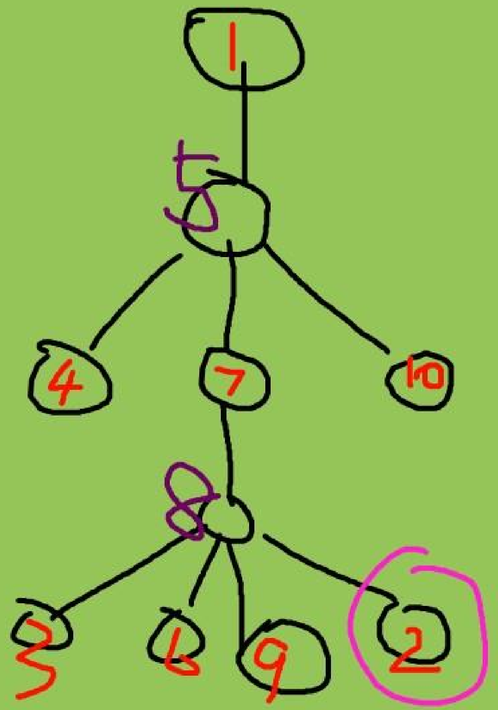
$d \geq 0$

距=3　　O(n)对



$O(n^2)$对

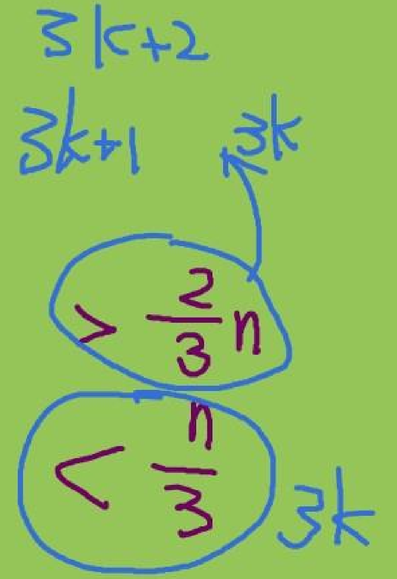




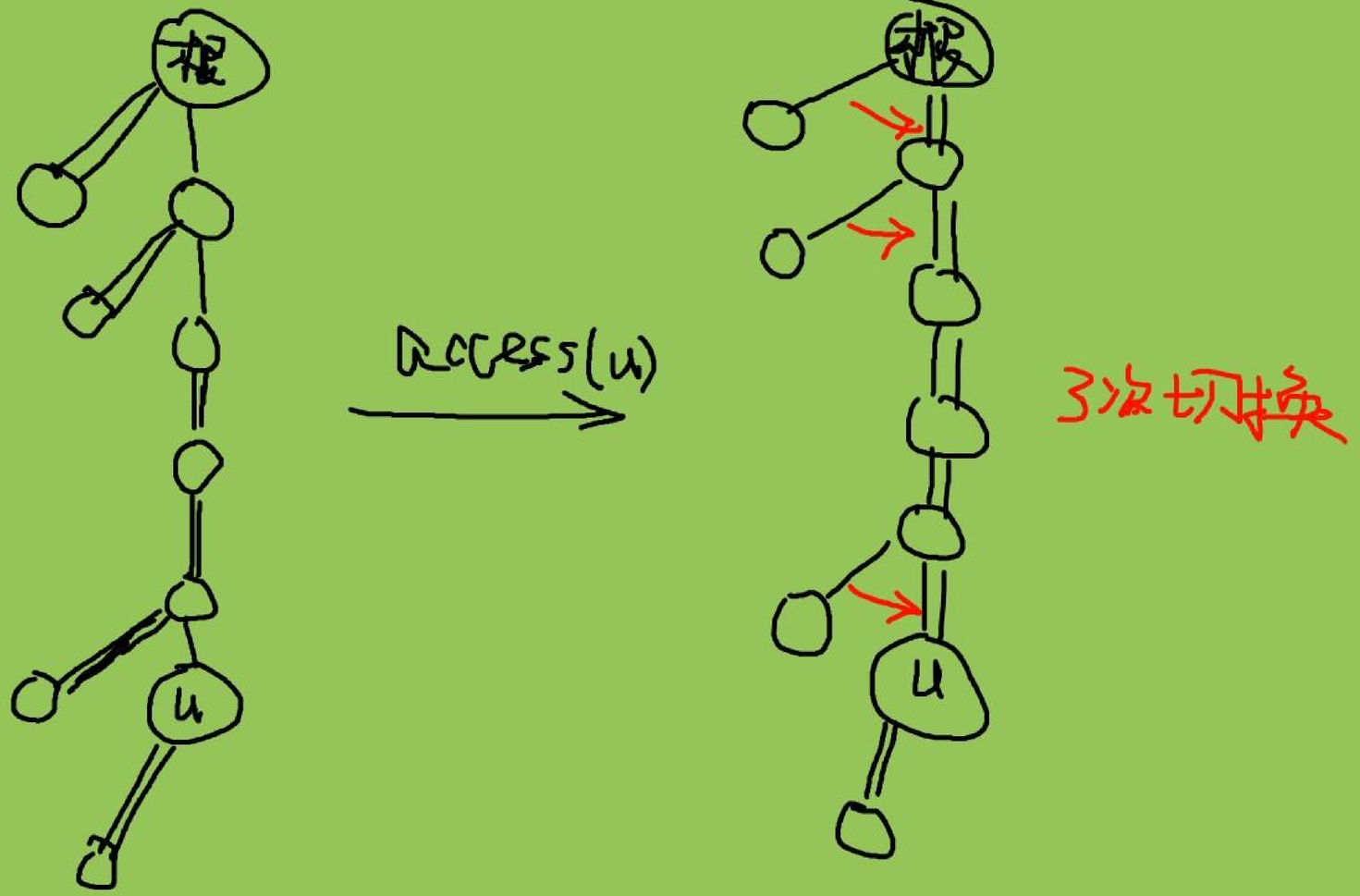
1~10

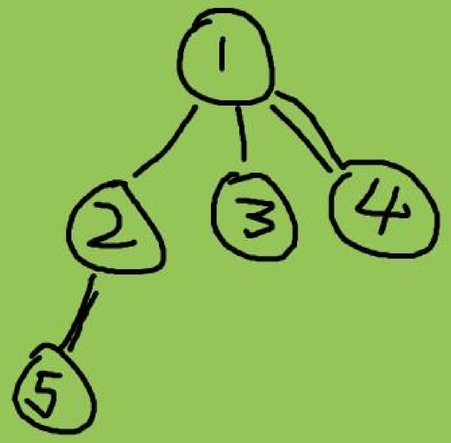
红(奇层) 8个

紫 偶层 2个

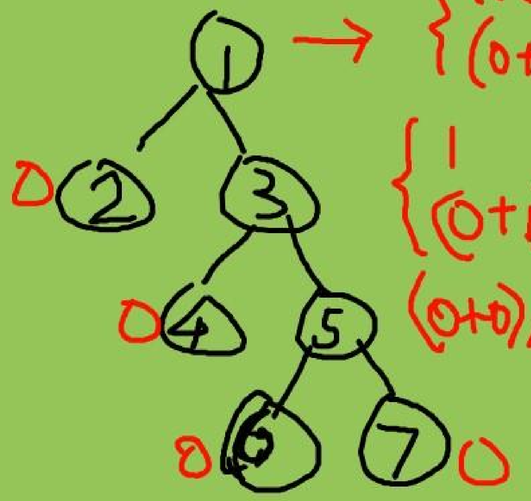


√


根
u
Access(u)
根
u
3次切换

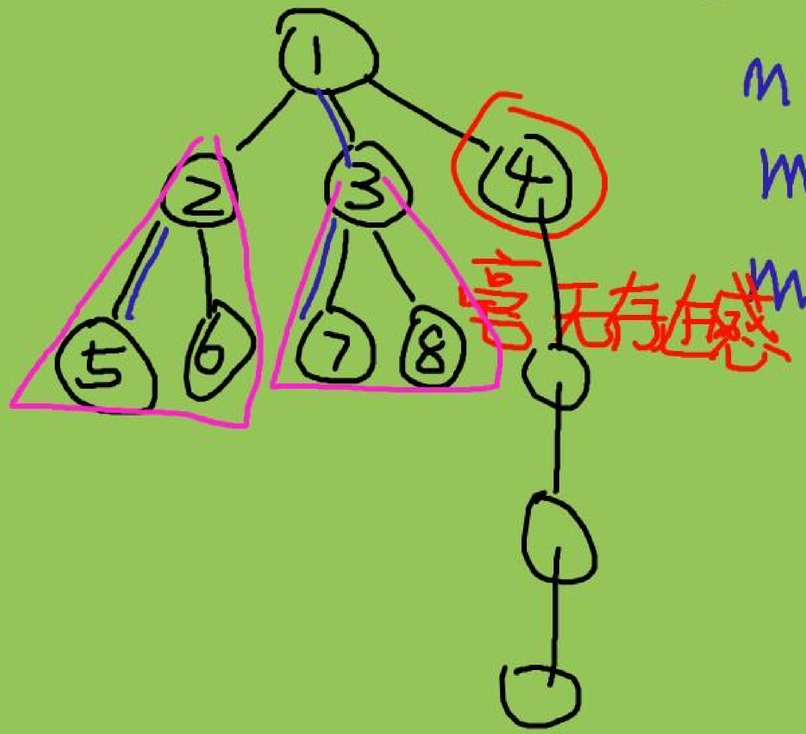


m=1 2次
m=2 +1次
3 +1次
4 +1次
⋮ ⋮
∞ 平均 1次



{1.5
(0+1.5)/2+1 =1.75

{1
(0+1)/2+1 =1.5
(0+0)/2+1 =1



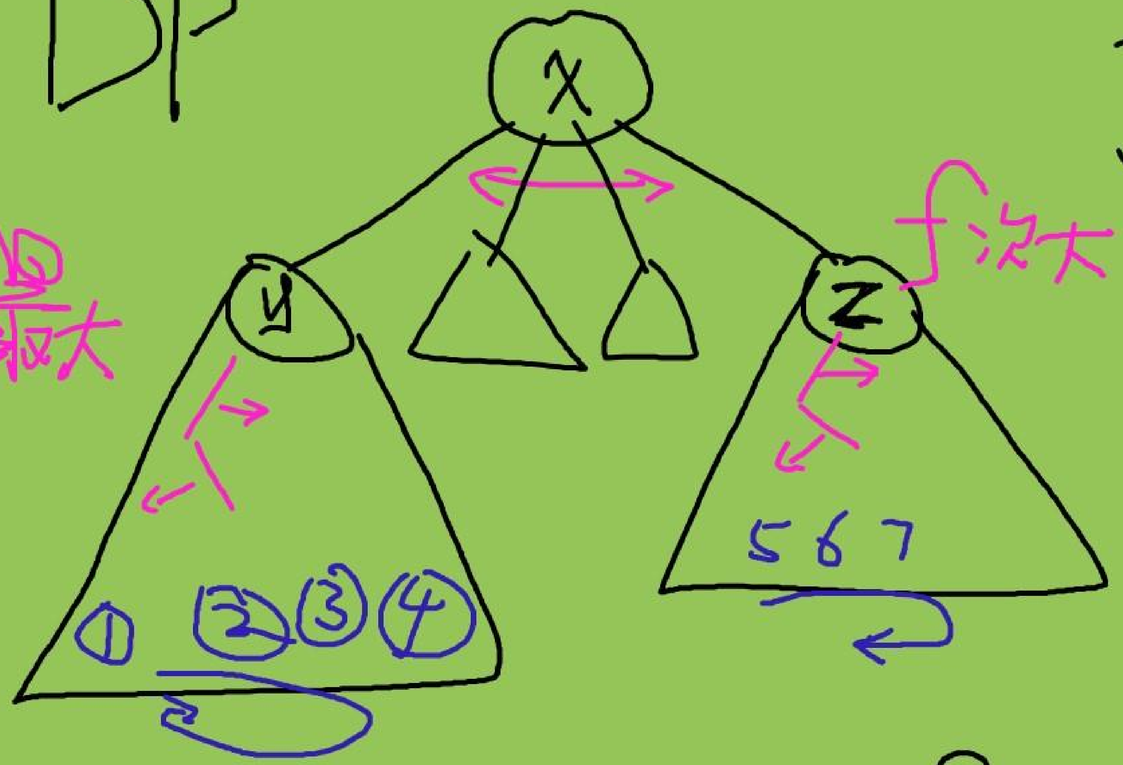
高无存感

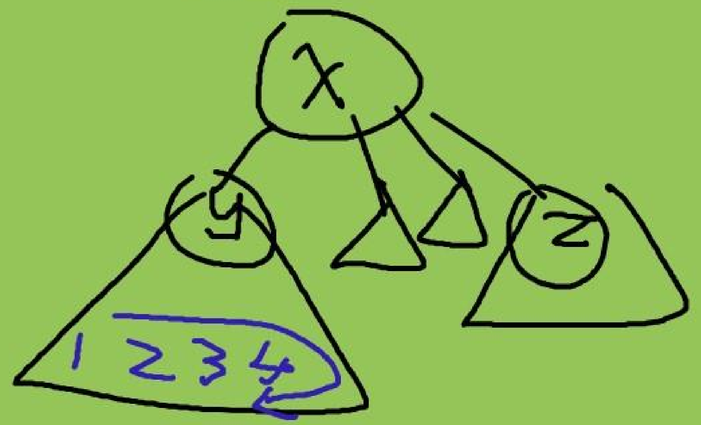
m=1 2次
m=2 +2
m=3 +2
4 +2
5 +2
6 +2
+2

5
7
6
8
5
7
6

平均 2次

DP





$f[x]$：x为根子树 最大平均

y最优：1 2 3 4 ···

z最优：5 6 7 ···

x可：1 5 2 6 3 7 4 5 1 6 2 7 3 5

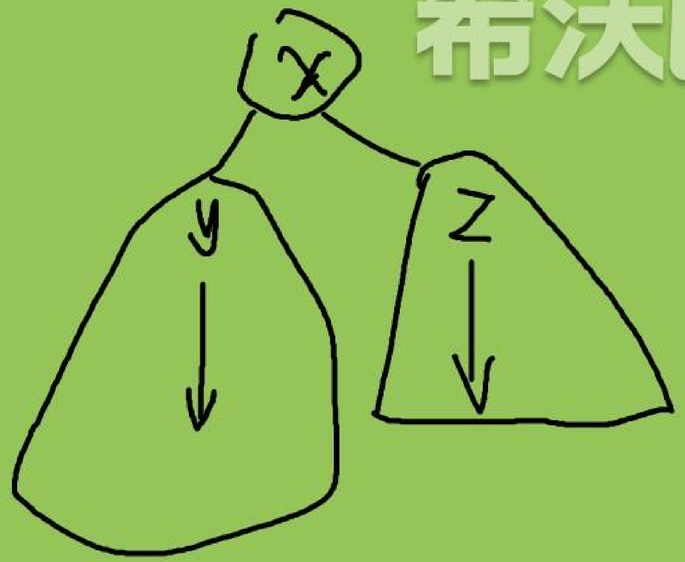
$$f[x] = \max \begin{cases} \dfrac{f[y]+f[z]}{2}+1 \\ f[y] \end{cases}$$

整。010101111010----101

Vector

len≤h

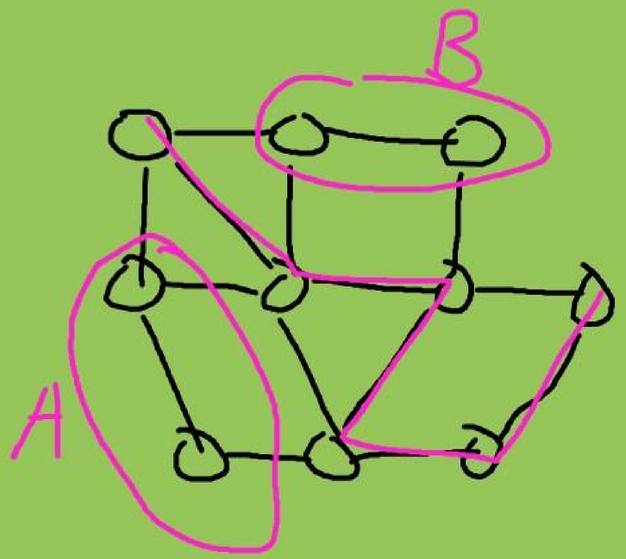
f[y] f[z] 比大小 暴力

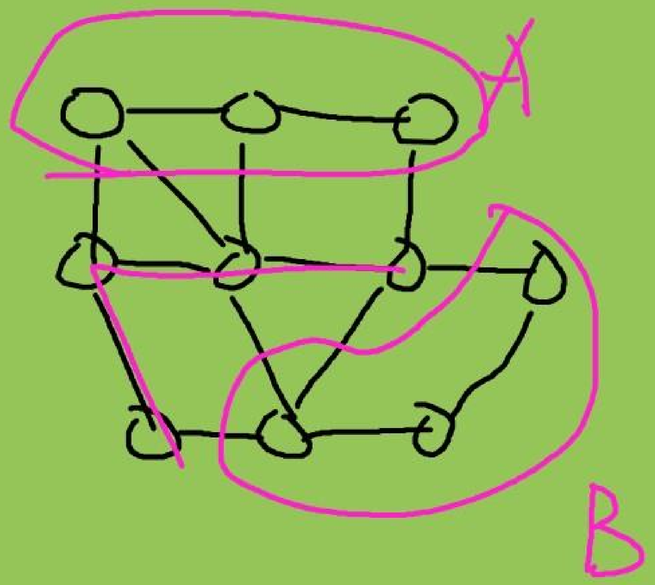


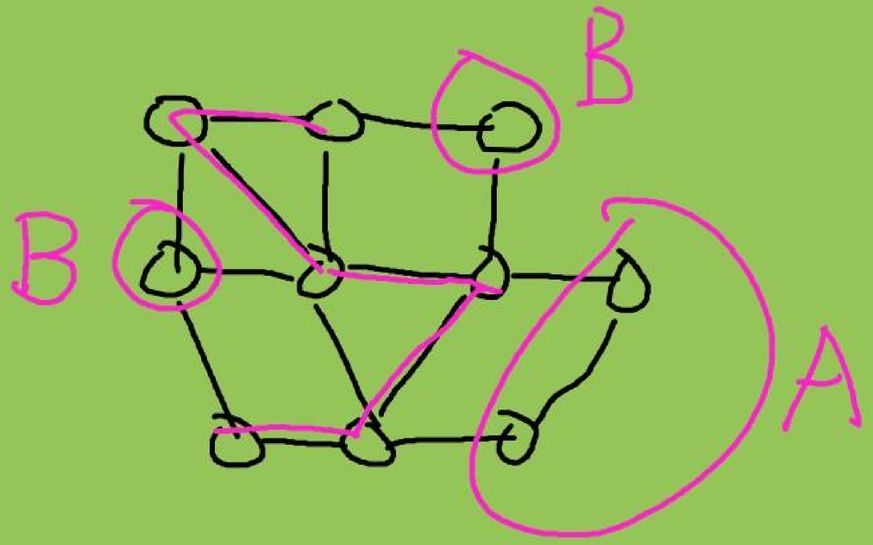
tmp=f[y]+f[z] 加 暴力

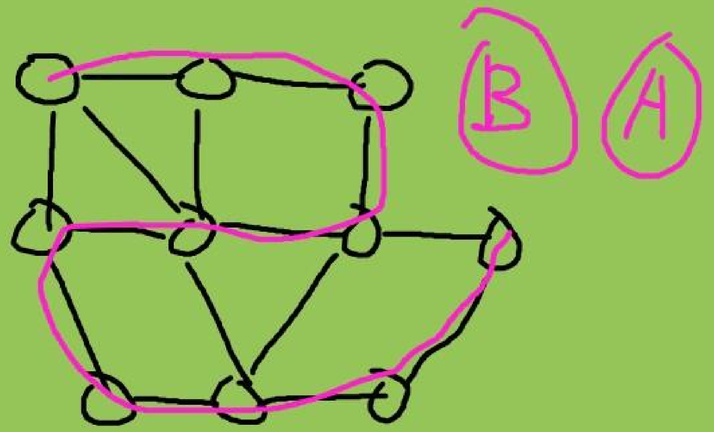
f[x]=tmp/2+1 push_back O(1)

O(nlogn)

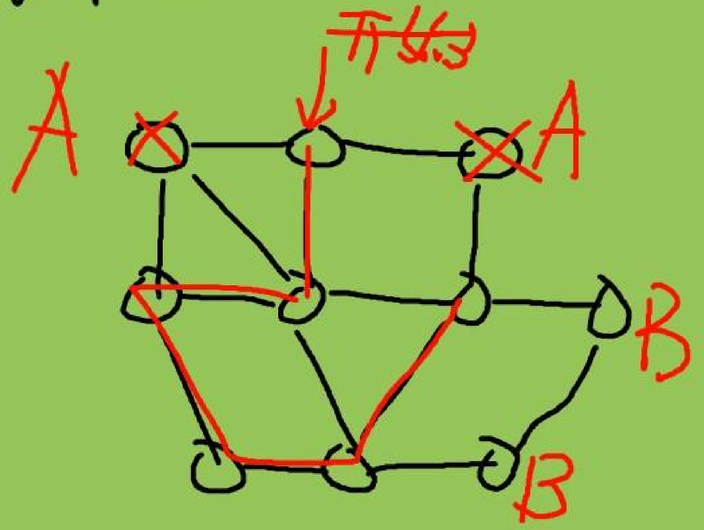

B
A


A
B


B
B
A

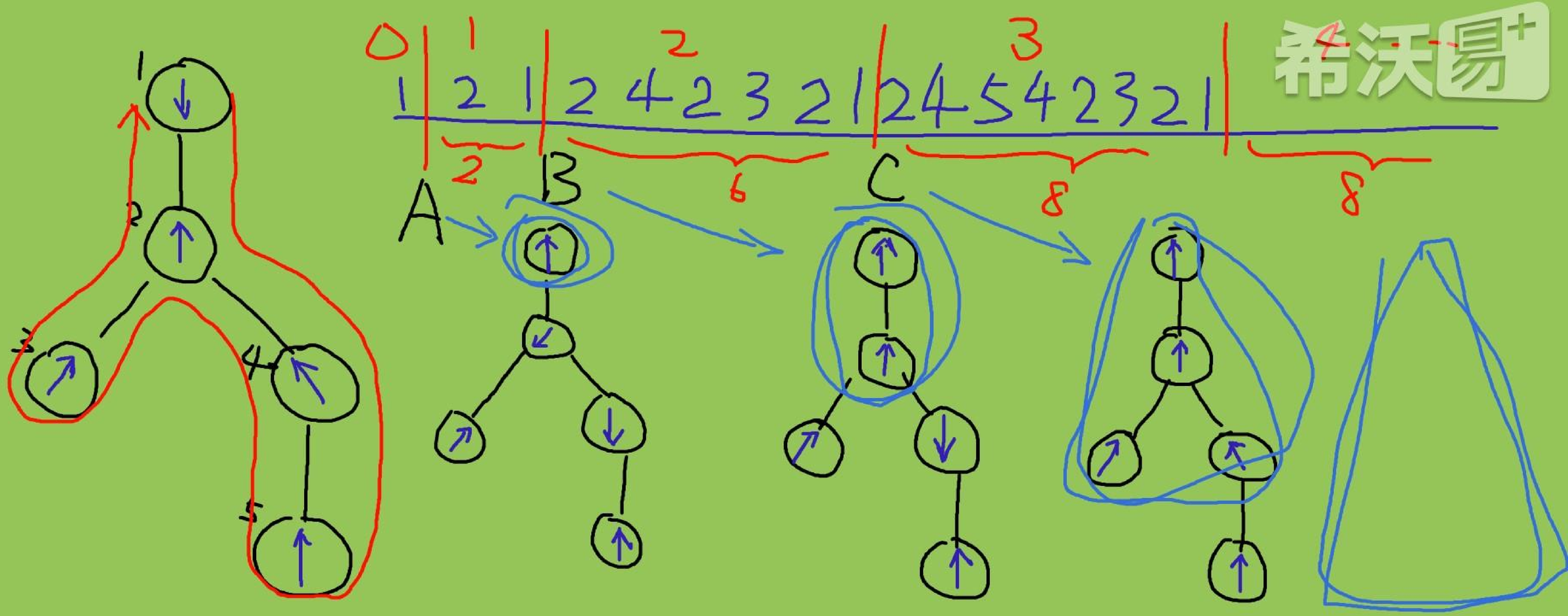

B
A

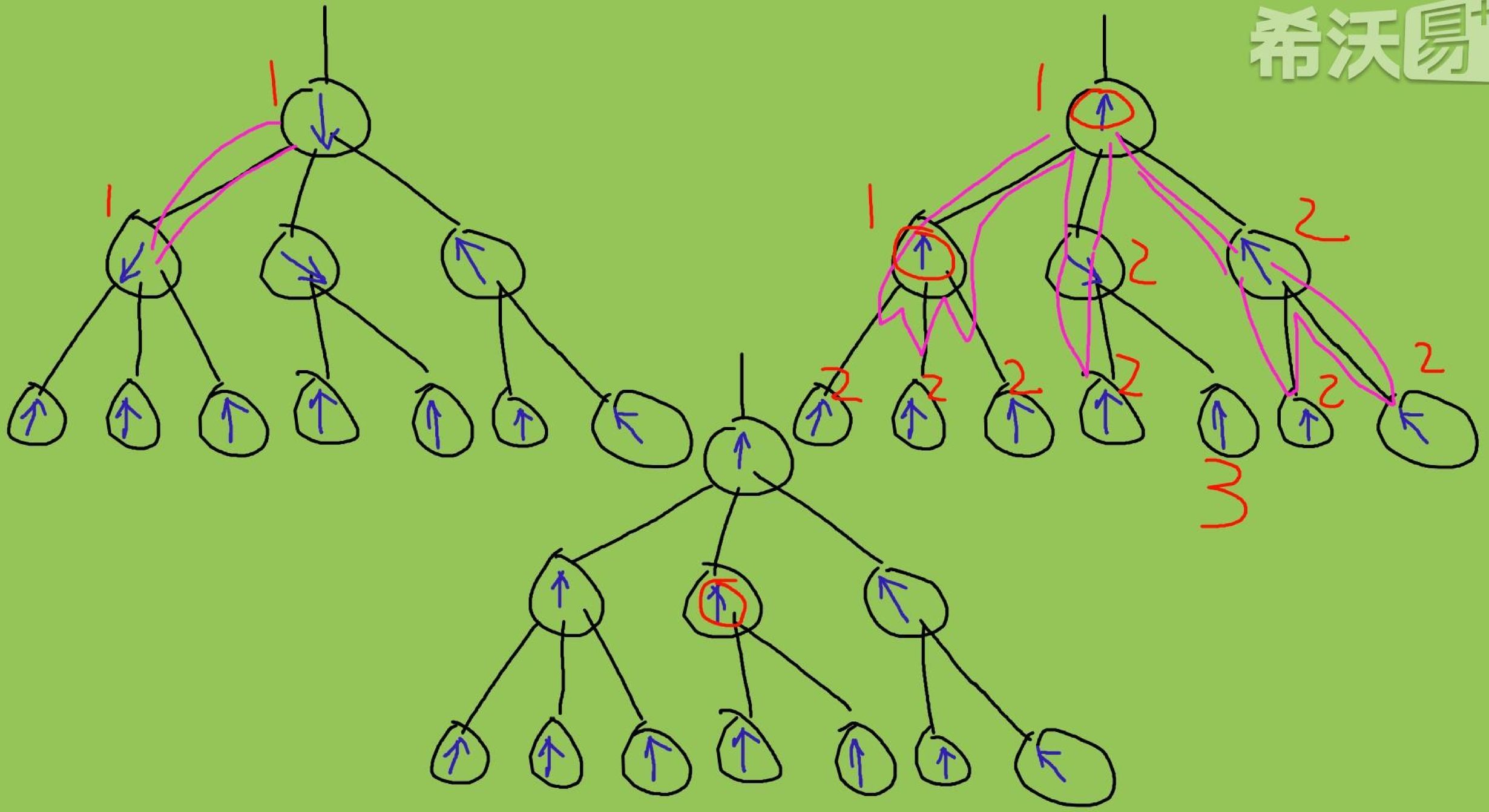
DFS

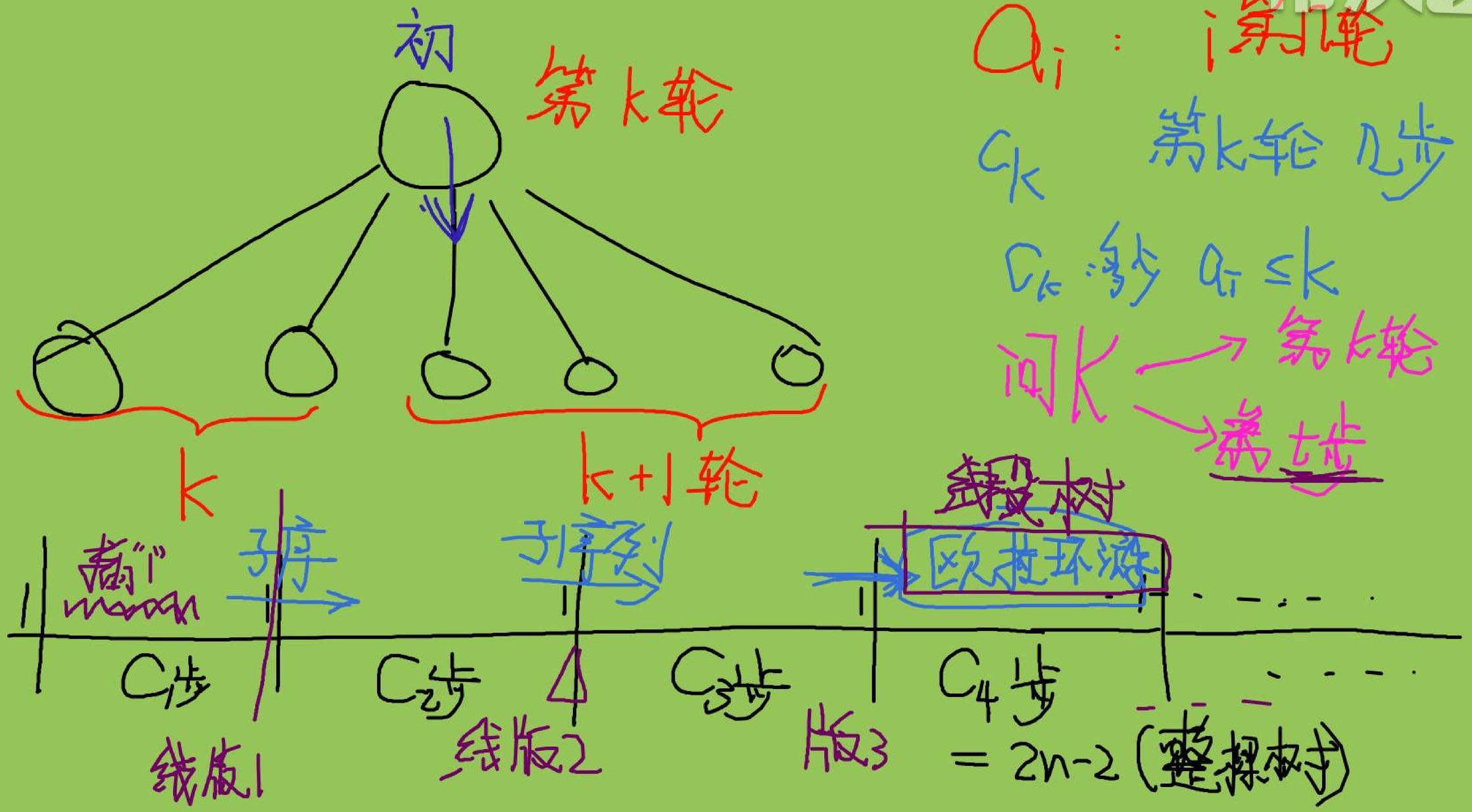


↓ B -1个

↑ A +1个


0 1 2 3
1 2 1 2 4 2 3 2 1 2 4 5 4 2 3 2 1
2 6 8 8
A B C
1
2
3
4
5


1
1
1
1
2
2
2
2
2
2
2
3


初
第k轮
k
k+1轮
Q_i : i第几轮
C_k 第k轮 几步
C_k 多少 $Q_i \le k$
问k → 第k轮
→ 第七步
线段树
区间环游
子序列
子序列
C1步
C2步
C3步
C4步
线版1
线版2
版3
= 2n-2 (遍历次序)