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 l, r, d

Input






```
xxxxxxxxxxxxxxxxxxxxxxxx cin x cout xxxxxxxxxxxxxxxxxxxx
```

$$T \quad 1 \leq T \leq 12$$
$$n + q + 1$$
$$n, q, s \quad 1 \leq n, q \leq 4 \times 10^4 \quad 1 \leq s \leq n$$
$$n \quad i+1 \quad 1 \leq i \leq n \quad k_i \quad 0 \leq k_i < n \quad i$$
$$\begin{array}{rcl} k_i & p_{i,1}, p_{i,2}, p_{i,3}, \cdots, p_{i,k_i} & 1 \leq \\ p_{i,1}, p_{i,2}, p_{i,3}, \cdots, p_{i,k_i} \leq n & & i \end{array}$$
$$q \quad l, r, d \quad 0 \leq l, r, d \leq l + r + d \leq 4.5 \times 10^4$$

xor, sum

xor, sum

$$xor = \bigoplus_{i=1}^q ans_i \times i$$

$$sum = \sum_{i=1}^q ans_i \times i$$

$$ans_i \oplus i$$

Sample Input

```

2
3 3 2
2 3 2
0
0
0 1 0
1 0 1
1 1 1
11 4 4
0
0
0
4 6 5 10 7
1 11
1 1
2 9 8
0
0
2 3 2
0
0 0 2
0 721 3
0 1 1
0 721 1

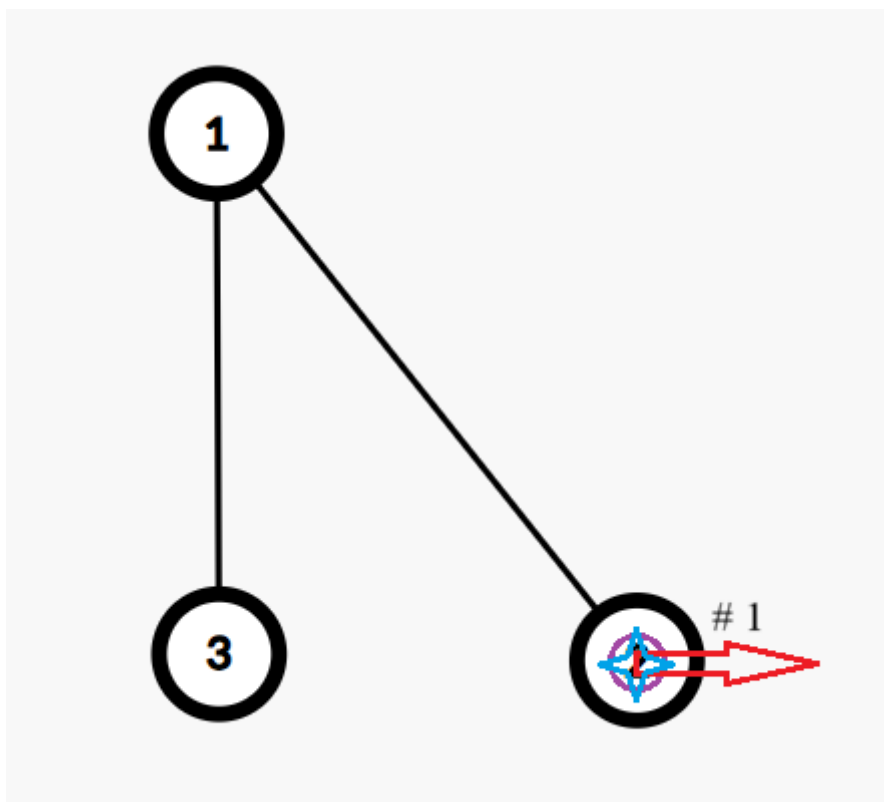
```

Sample Output

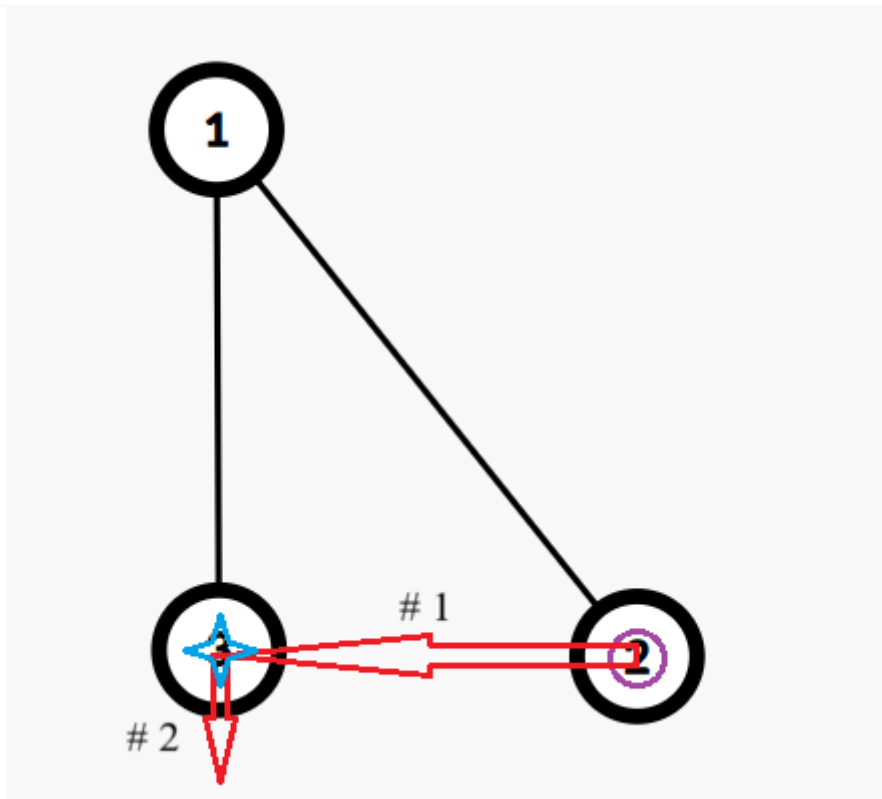
13 17
45 81

Hint

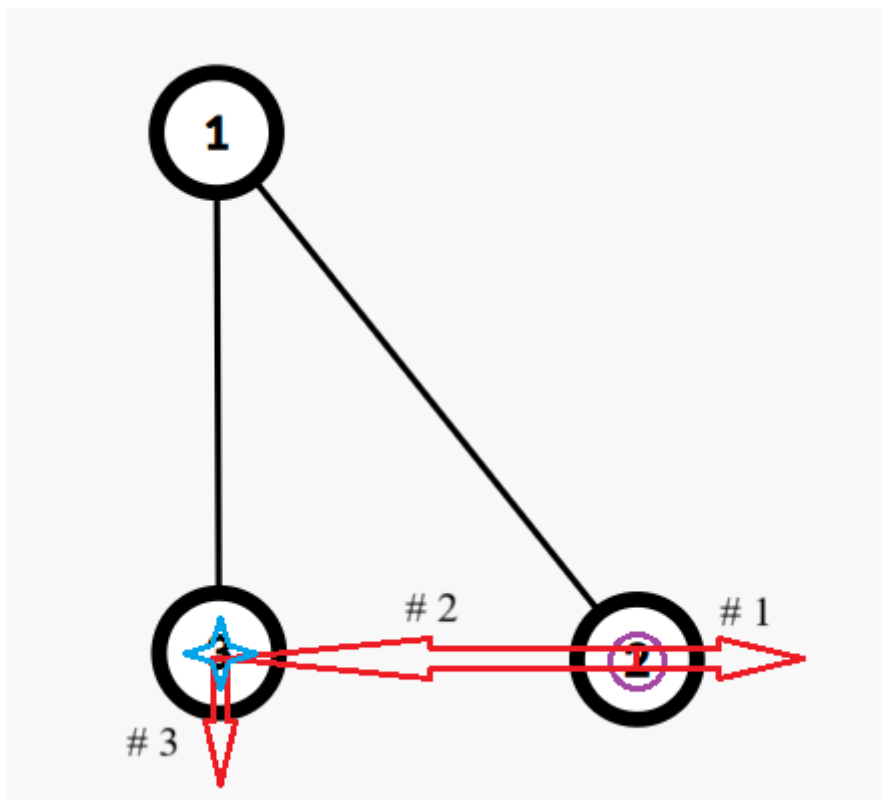
■ 1 3 3 2
- 1 $l = 0, r = 1, d = 0$ \rightarrow 2



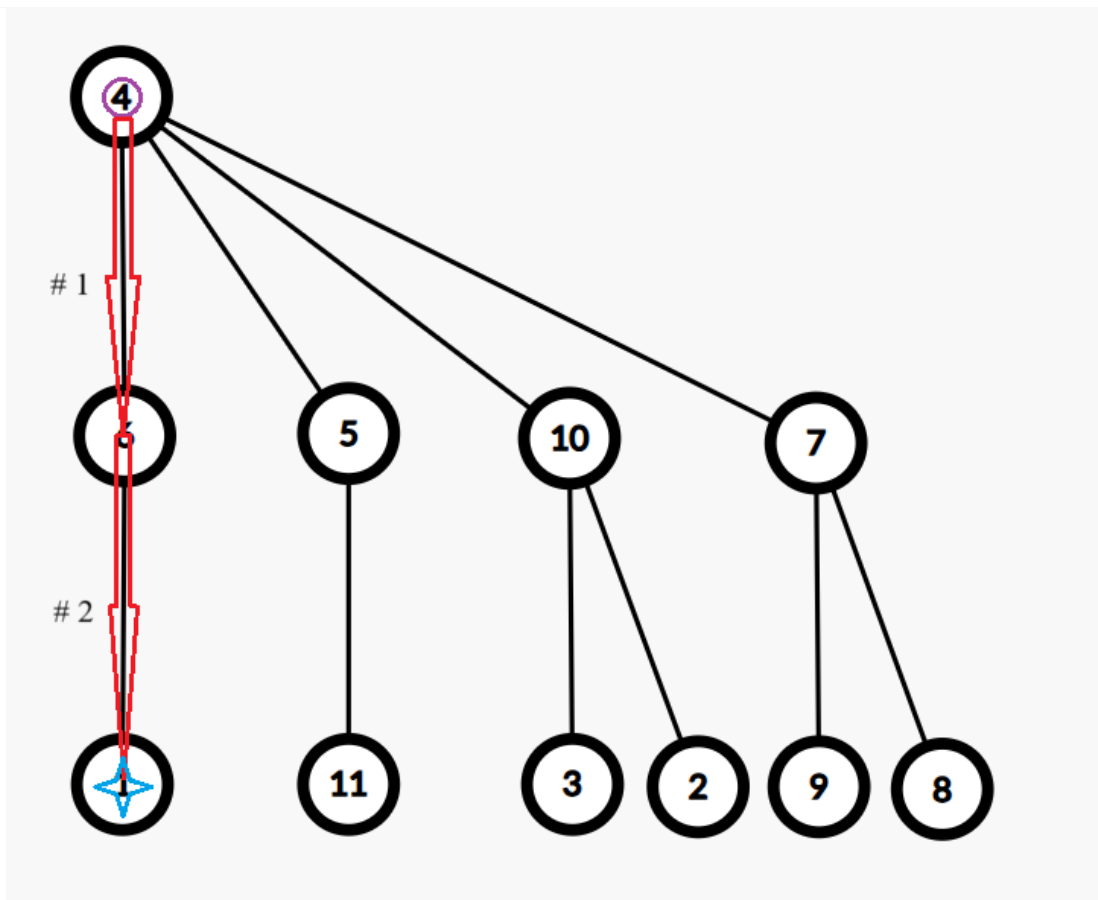
■ 2 $l = 1, r = 0, d = 1$ $\leftarrow \downarrow$ 3



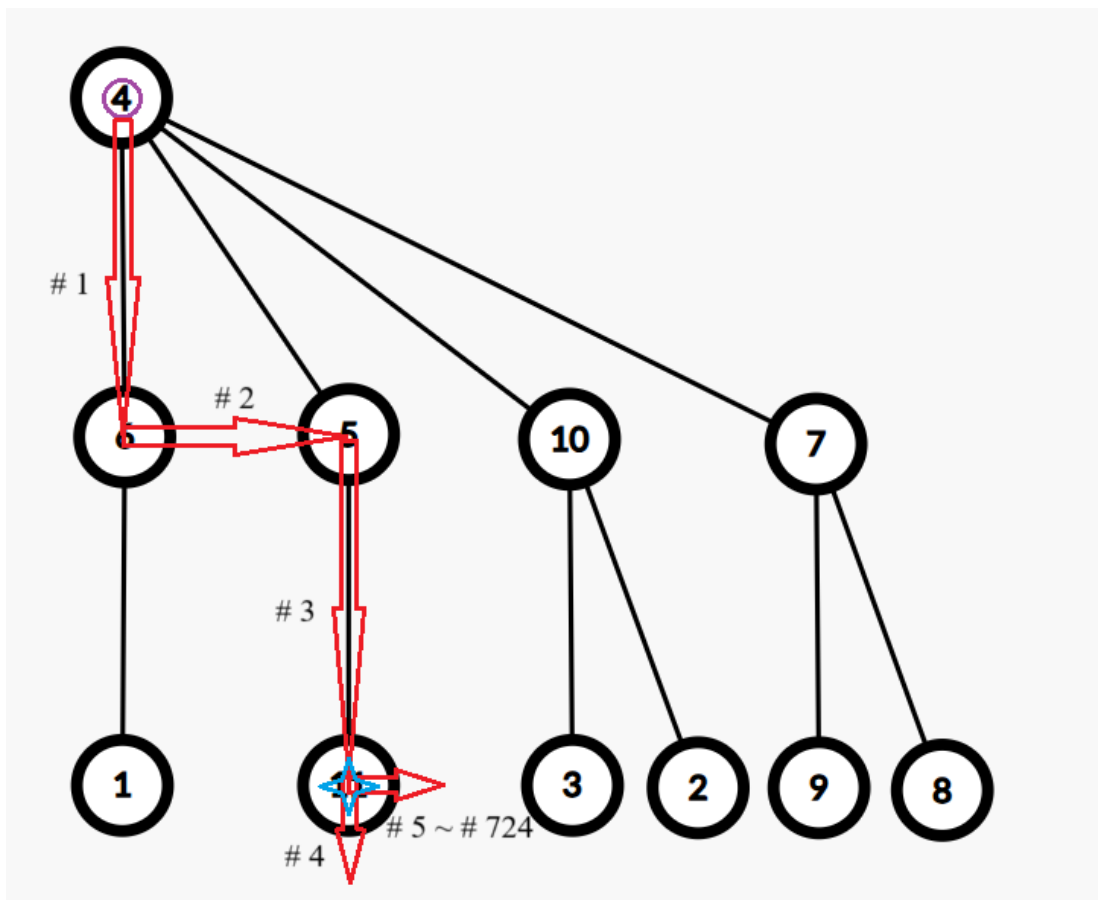
■ 3 $l = 1, r = 1, d = 1$ $\rightarrow \leftarrow \downarrow$ 3



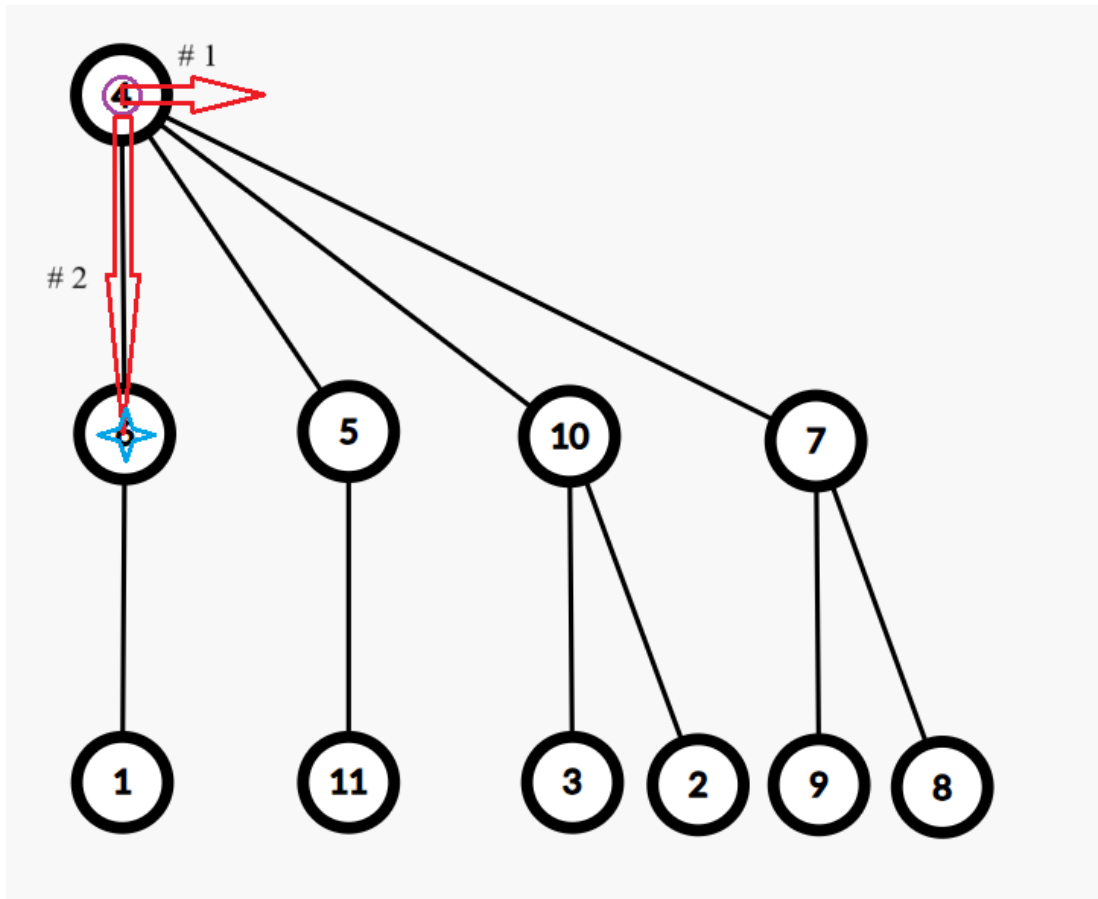
■ 1 $l = 0, r = 0, d = 2$ $\downarrow \downarrow$ 1



■ 2 $l = 0, r = 721, d = 3$ $\downarrow \rightarrow \downarrow \downarrow$ 720 \rightarrow 11



3 $l = 0, r = 1, d = 1$ $\rightarrow \downarrow$ 6



4 $l = 0, r = 721, d = 1$ 719 \rightarrow $\downarrow \rightarrow \rightarrow$ 10

