1002 Mon2tr

Problem Description

“

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$1, 2, 3, \cdots, n$ d_i i $1 \le i \le n$

1

q i $1 \le i \le q$ x_i, y_i, z_i j $1 \le j \le n$ $v_j = d_{\mathrm{LCA}(j, x_i)}$ $\mathrm{LCA}(u, v)$ u, v

i $1 \le i \le q$ $j - v_j \le y_i \le j \le j + v_j \le z_i$ j $1 \le j \le n$ $j + v_j$ $y_i > z_i$ 0

Input

Kal'tsit

C++ STL

https://www.luogu.me/paste/y4lm88ha

T $1 \le T \le 3.5 \times 10^5$

$q + 2$

n, q $1 \le n \le 8 \times 10^4, 1 \le q \le 10^5$ $1 \le \sum n \le 3.5 \times 10^5, 1 \le \sum q \le 5 \times 10^5$

n $fa_1, fa_2, fa_3, \cdots, fa_n$ $0 \le fa_1, fa_2, fa_3, \cdots, fa_n \le n$
$fa_i = 0$ $1 \le i \le n$ i

q $i+2$ $1 \le i \le q$ x'_i, y'_i, z'_i $0 \le x'_i, y'_i, z'_i < 10^9$
i

i $1 \le i \le q$ x_i, y_i, z_i

- $lans$ $i-1$ $i=1$ $lans=0$
- $x_i = [(x'_i + lans) \bmod n] + 1$ $y_i = [(y'_i + lans) \bmod (2n-1)] - (n-1)$ $z_i = [(z'_i + lans) \bmod (2n-1)] + 1$ $\bmod$ $3 \bmod 2 = 1, (-7) \bmod 3 = 2$

Output

q

i $1 \le i \le q$ i

Sample Input

```
5
5 5
2 3 4 5 0
3 428538 54277
3 417360 4017
3 892741 445551
4 964351 433610
4 472928 556419
5 5
2 0 5 3 1
2 145658 137247
5 616008 743457
```

```
3 236233 341788
5 338103 325826
2 722091 315410
5 5
5 0 4 2 3
1 904355 654626
2 418807 822821
4 45452 454729
5 4372 624796
3 138698 133893
5 5
2 0 1 5 2
1 698219 122911
5 682494 893039
3 293682 893575
1 804585 301494
5 634397 319946
15 15
5 4 4 9 3 7 9 15 0 3 12 6 9 3 9
2 305062 35660
3 843437 749658
11 170333 369270
1 311572 416623
8 860851 743360
4 16581 926304
5 369493 824555
6 517688 889937
8 710314 148564
7 21922 973381
13 790964 3688
7 989786 105365
1 359041 27784
6 623431 2814
6 678899 377943
```

Sample Output

```
3
6
0
0
3
0
3
2
0
3
0
0
5
0
0
6
0
0
0
5
0
0
4
0
3
13
7
8
0
17
0
4
0
```

```
0
0
```

Hint

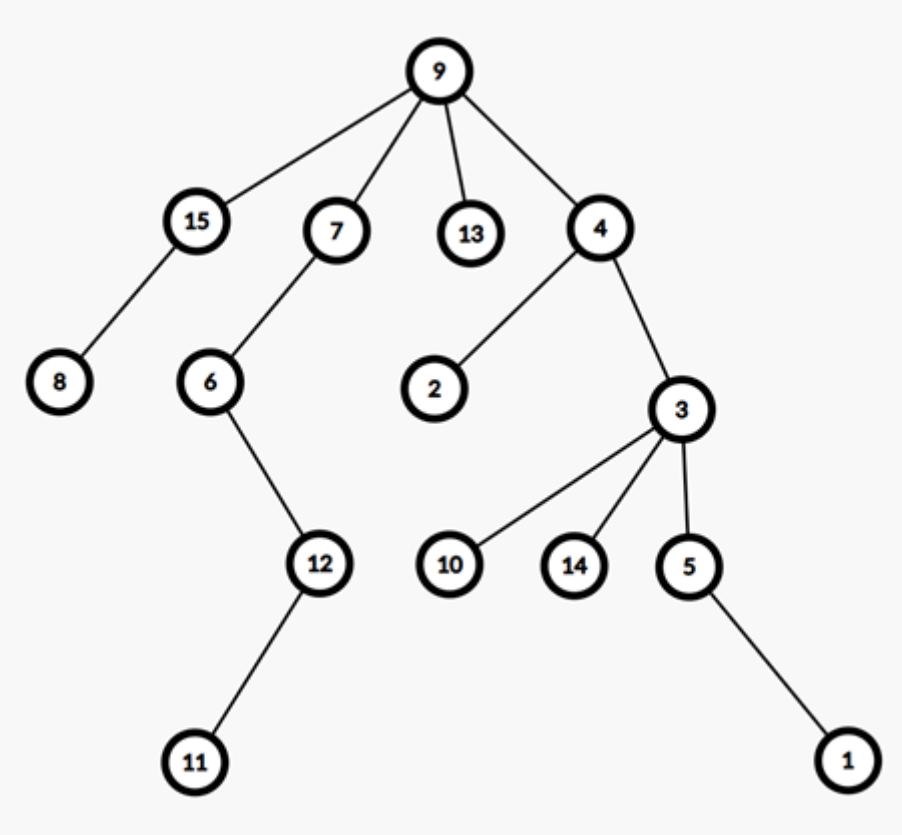
5

1 $x_1 = 4, y_1 = -1, z_1 = 8$

- $j = 1$ $j - v_j = -1, j + v_j = 3$ $j - v_j \le y_1 \le j \le j + v_j \le z_1$
- $j = 2$ $j - v_j = 0, j + v_j = 4$
- $j = 3$ $j - v_j = 1, j + v_j = 5$
- $j = 4$ $j - v_j = 2, j + v_j = 6$
- $j = 5$ $j - v_j = 4, j + v_j = 6$

3

- 2 $x_2 = 2, y_2 = 2, z_2 = 7$ $j = 2/3/4$ 6
- 3 $x_3 = 5, y_3 = -3, z_3 = 4$ 0
- 4 $x_4 = 5, y_4 = -3, z_4 = 9$ 0
- 5 $x_5 = 5, y_5 = 1, z_5 = 4$ $j = 2$ 3



15

- 1 $x_1 = 3, y_1 = -3, z_1 = 20$ 0
- 2 $x_2 = 4, y_2 = -13, z_2 = 9$ 0
- 3 $x_3 = 12, y_3 = 2, z_3 = 14$ $j = 3$ 4
- 4 $x_4 = 6, y_4 = -14, z_4 = 14$ 0
- 5 $x_5 = 9, y_5 = 1, z_5 = 4$ $j = 2$ 3
- 6 $x_6 = 8, y_6 = 11, z_6 = 19$ $j = 12$ 13
- 7 $x_7 = 4, y_7 = 3, z_7 = 12$ $j = 5$ 7
- 8 $x_8 = 14, y_8 = 2, z_8 = 22$ $j = 5$ 8
- 9 $x_9 = 2, y_9 = 11, z_9 = 6$ 0

- 10 $x_{10} = 8, y_{10} = 13, z_{10} = 26$ $j = 15$ 17
- 11 $x_{11} = 1, y_{11} = -8, z_{11} = 23$ 0
- 12 $x_{12} = 8, y_{12} = 2, z_{12} = 9$ $j = 3$ 4
- 13 $x_{13} = 6, y_{13} = 11, z_{13} = 7$ 0
- 14 $x_{14} = 7, y_{14} = 4, z_{14} = 2$ 0
- 15 $x_{15} = 7, y_{15} = -5, z_{15} = 16$ 0