

HOME TOP CATALOG CONTESTS GYM PROBLEMSET GROUPS RATING EDU API CALENDAR HELP

STEP 1 STEP 2 STEP 3 STEP 4 | THEORY PRACTICE | SUBMIT SUBMISSIONS HACKS STANDINGS CUSTOM INVOCATION ITMO Academy: pilot course » Segment Tree, part 1 » Step 4 » Practice

B. Cryptography

time limit per test: 2 seconds¹
memory limit per test: 1024 megabytes
input: standard input
output: standard output

Given n matrices A_1,A_2,\ldots,A_n of size 2×2 . You need to calculate the product of the matrices A_i,A_{i+1},\ldots,A_j for several queries. All calculations are performed modulo r.

Input

The first line of the input file contains integers r ($1 \le r \le 10\,000$), n ($1 \le n \le 200\,000$), and m ($1 \le m \le 200\,000$). The following n blocks are two lines each containing two integers, the matrix descriptions. Then follow m pairs of integers from 1 to n, requests for a product on a segment.

Output

Print m blocks of two lines, two integers in each: products on segments. Separate blocks with an empty string. All calculations are performed modulo r.

Example

Example .	
input	Сору
3 4 4	
0 1 0 0	
2 1	
1 2	
0 0 0 0 2	
1 0	
0 2	
1 4	
2 3	
1 3	
2 2	
output	Сору
0 2	
0 0	
0 2	
0 1	
0 1 0 0	
2 1	
1 2	

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The only programming contests Web 2.0 platform
Server time: Jun/29/2024 14:21:48 (g1).
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