

# Helesta

Input file:            **standard input**  
Output file:           **standard output**  
Time limit:            2 seconds  
Memory limit:         256 megabytes

You are given  $n$  points  $(x_i, y_i)$ ,  $1 \leq i \leq n$  and  $m$  sets  $S_j = \{(x_i, y_i) \mid A_j x_i + B_j y_i + C_j > 0\}$  ( $1 \leq j \leq m$ ).

You need to find a permutation  $p_1, \dots, p_m$  of  $1, 2, \dots, m$ , such that  $|S_{p_1}| + \sum_{i=2}^m |S_{p_i} \oplus S_{p_{i-1}}| \leq M$ , where  $M = 1.8 \times 10^8$  is a given constant and  $A \oplus B$  means  $(A \cup B) - (A \cap B)$ .

If there are several possible answers, you can print any of them.

## Input

The first line contains two integers  $n, m$  ( $1 \leq n \leq 10^5, 1 \leq m \leq 2 \times 10^5$ ).

Each line in the next  $n$  lines contains two integers  $x_i, y_i$  ( $-10^8 \leq x_i, y_i \leq 10^8$ ).

Each line in the next  $m$  lines contains three integers  $A_j, B_j, C_j$  ( $-10^8 \leq A_j, B_j, C_j \leq 10^8$ ).

It is guaranteed that  $A_j^2 + B_j^2 > 0$  for  $1 \leq j \leq m$ .

## Output

Print  $m$  lines. In the  $i$ -th line, print a single integer  $p_i$ .

## Example

standard input	standard output
5 3	2
2021 700	1
-9384 1031	3
2201 2561	
4982 6255	
-1700 388	
-2151 1808 -4359815	
-2850 -1980 7147359	
-924 217 -8902828	