

6949 Knockout Racing

The races became more popular than ever at Pandora planet. But these races are quite unusual. There are n cars participating in a race on the long straight track. Each car moves with a speed of 1 meter per second. Track has coordinates in meters.

The car number i moves between two points on the track with coordinates a_i and b_i starting at the second 0 in the point a_i . The car moves from a_i to b_i , then from b_i to a_i , then from a_i to b_i again, and so on.

Handsome Mike wants to knock some cars out of the race using dynamite. Thus he has m questions. The question number j is: what is the number of cars in the coordinates between x_j and y_j inclusive after t_j seconds from the start?

Your task is to answer Mike's questions.

Input

The input file contains several test cases, each of them as described below.

The first line of the input contains two integers n and m ($1 \leq n, m \leq 1000$) — the number of cars in the race and the number of questions.

Each of the following n lines contains a description of the car: two integers a_i and b_i ($0 \leq a_i, b_i \leq 10^9$, $a_i \neq b_i$) — the coordinates of the two points between which the car i moves.

Each of the following m lines contains a description of the question: three integers x_j , y_j , and t_j ($0 \leq x_j \leq y_j \leq 10^9$, $0 \leq t_j \leq 10^9$) — the coordinate range and the time for the question j .

Output

For each test case, write m lines to the output. Each line must contain one integer — the answer to the corresponding question in order they are given in the input.

Sample Input

```
5 5
0 1
0 2
2 3
3 5
4 5
0 5 0
0 1 2
0 2 1
2 5 2
2 5 3
```

Sample Output

```
5
1
2
4
3
```