

Trip

2024/2025 SEASON – ROUND 2



Deni went to visit Dali in Dryhoven (it barely rains there). After a delightful walk around the city, Deni had to go home. Unexpectedly, all trains got cancelled until the end of the day. An unforgettable rail journey back home began.

While travelling, Deni imagined the railway map as a set of segments on the integer number line with left and right ends l_i, r_i . He wondered, if he chooses one segment and an integer K , how many railway lines would intersect the chosen one in at least K integer points.

Due to his phone battery being low and his huge interest about Q segments, you have to calculate with how many other segments the favored ones will intersect in the desired way. He sent you some information about N segments, containing description about the railway lines.

Input

The first line of the file **trip.in** reads 3 integers N, Q and K . The next N lines consist of 2 integers: $l_i r_i$ – the 2 ends of the railway lines. Q queries follow with 2 numbers each: $p_j q_j$ – the ends of the segments of interest.

Output

Print Q lines in the file **trip.out** with 1 number each – the desired number.

Constraints

$$2 \leq N, Q \leq 2 * 10^5$$

$$1 \leq l_i \leq r_i \leq 10^6$$

$$1 \leq p_j \leq q_j \leq 10^6$$

$$1 \leq K \leq 10^6$$

Time limit: 0.2 sec.

Memory limit: 256 MB

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Sample test

Input (trip.in)	Output (trip.out)
7 4 3	4
1 5	3
2 6	4
4 9	3
6 10	
2 4	
7 10	
3 8	
3 6	
5 8	
2 5	
4 7	

Sample test explanation:

The segments intersecting $[5,8]$ in at least 3 points are: $[4,9]$, $[6,10]$ and $[3,8]$.