

D. Differences

time limit per test: 15 seconds
memory limit per test: 256 megabytes
input: differences.in

You have an array of pairs of integers (X_i, F_i) where F_i is the frequency of X_i in some very big array A .

You will be given Q queries to be performed on A , each query will have 2 integers l and r .

For each query, output the number of pairs of integers (A_i, A_j) with an absolute difference between l and r (inclusive). In other words, the number of pairs (A_i, A_j) such that $l \leq |A_i - A_j| \leq r$.

Since this number is large, output it modulo 132120577.

Input

First line will be the number of test cases T , in each test case you will be given the following:

First line containing an integer N , the number of frequency pairs. $(1 \leq N \leq 10^5)$

Followed by N lines where each line has 2 integers separated by a space: X_i and F_i . $(1 \leq X_i \leq N)$ and $(1 \leq F_i \leq 10^9)$

Followed by a line containing an integer Q , the number of queries. $(1 \leq Q \leq 10^6)$

Followed by Q lines, each line containing 2 integers l and r separated by a space. $(1 \leq l, r \leq N)$

Output

For each test case, output Q integers, each integer on a separate line.

Each line should contain 1 integer, the answer to the i^{th} query.

Example

input	Copy
1 3 1 1 2 1 3 1 1 1 3	
output	Copy
3	

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About Group

https://www.youtube.com/@MoamenAhmed98/play

Group website

Group Contests

- Tunisian Collegiate Programming Contest (2017)
- Azhar Collegiate Programming Contest 2019
- The 2018 Menofia University Collegiate Programming Contest
- ICPC International Collegiate Programming Contest, Assiut Collegiate Programming Contest (2019)
- International Collegiate Programming Contest, GUC Collegiate Programming Contest (2019)
- International Collegiate Programming Contest, Aleppo University Collegiate Programming Contest(2018)
- The 2025 ICPC Egyptian Collegiate Programming Contest for Teens(Online Qualification)
- ECPC Qualifications 2021 - Day 4
- ACPC Kickoff 2025
- International Collegiate Programming Contest, Al-Baath, Tishreen, Aleppo and Damascus Collegiate Programming Contest (2021)
- The 2020 Egyptian Collegiate Programming Qualification Contest Day 2
- OCPC 2025 (Qualification)
- OCPC 2025
- ACPC 2024 (Mirror)
- LCPC 2024 (Mirror)
- JCPC 2024 (Mirror)
- EthCPC (Mirror)
- PCPC 2024
- LyCPC 2024
- AOCPC 2024
- AOCPC 2023
- QCPC 2024 (Mirror)
- TCPC 2024 (Mirror)
- AICPC 2023
- SCPC 2024 (Mirror)
- SCPC 2024 For Teens (Mirror)
- ECPC 2024 (Mirror)
- ECPC Qualifications 2024 Day 6 (Mirror)