Problem A: Add polynomials together

Description

As Narnal has learned in the class, a polynomial can be represented as a linked list, but he failed to add two given polynomials together. He asks you to help him to get the summation of two polynomials.

Input

First line will be a positive integer T, which is the number of test cases.

In each test case, the first line will be an integer n for the number of terms of the first polynomial. Then the next n lines will be the coefficients and exponents of the terms with the order of **increasing** exponents.

After $n + 1$ lines, there will be an integer m for the number of terms of the second polynomial. Then the next m lines will be the coefficients and exponents of the terms with the order of **increasing** exponents.

After $n + m + 2$ lines, there will be an integer q denoting the number of queries. Then one line containing q **ascending** numbers will follow, where each number k represents a query for the coefficient of exponent of k.

$1 \le T \le 200, 1 \le n, m \le 10^3, 1 \le q \le 2 \times 10^3, 0 \le k \le 10^9$. The **coefficients** will be in range $[-10^4, 10^4]$. The **exponents** will be in range $[0, 10^9]$.

Output

For each case, output one line contains q answers of the corresponding queries.

Sample Input

```
1
2
1 1
2 3
3
1 100
3 150
5 170
4
1 20 100 170
```

Sample Output

```
1 0 1 5
```

HINT

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