Final Boss: Polynomial Calculator

Challenge :

Problem: Write a program that simulates a polynomial calculator. The program should allow users to input multiple polynomials, store them dynamically, and perform operations like **addition** and **multiplication** on them.

Definitions:

A polynomial is an expression consisting of terms of the form $a_n x^n + a_{n-1} x^{n-1} + \ldots + a_1 x + a_0$, where:

- a_i is the coefficient of the term x^i,
- i is the power of x.

For example, the polynomial $3x^2 + 2x + 1$ is represented as:

- Coefficient and power pairs: `{(3,2), (2,1), (1,0)}`.

Input Format:

1. The first line contains an integer `T` ($1 \leq T \leq 100$), representing the number of polynomials.
2. The next `T` lines describe each polynomial. Each polynomial starts with an integer `K` ($1 \leq K \leq 100$), the number of terms in the polynomial, followed by `K` pairs of integers. Each pair consists of a coefficient (a) and a power (p), representing (ax^p). These terms are given in decreasing order of powers.
3. The next line contains two integers `A` and `B` ($0 \leq A, B < T$), representing the indices of two polynomials to add.
4. The following line contains two integers `C` and `D` ($0 \leq C, D < T$), representing the indices of two polynomials to multiply.

Output Format:

1. Output the result of adding polynomials `A` and `B` in increasing order.
2. Output the result of multiplying polynomials `C` and `D` in increasing order.

Constraints:

- Coefficients a_i and powers p_i are integers where:
  - $-1000 \leq a_i \leq 1000$,
  - $0 \leq p_i \leq 100$.
- Powers in the input for each polynomial are unique and given in decreasing order.

Example :

Input:

```
2
2 3 2 1 0
3 1 2 2 1 3 0
0 1
0 1
```

Explanation:

- First polynomial: $3x^2 + 1$
- Second polynomial: $1x^2 + 2x + 3$
- The first 0 1 means the addition is done by adding the first polynomial and the second polynomial $((3x^2 + 1) + (1x^2 + 2x + 3))$
- The second 0 1 means the multiplication is done by multiplying the first polynomial and the second polynomial $((3x^2 + 1) \times (1x^2 + 2x + 3))$

Output:

```
4 + 2x + 4x^2
3 + 2x + 10x^2 + 6x^3 + 3x^4
```

Detailed Breakdown:

- **Addition:**
  $(3x^2 + 1) + (1x^2 + 2x + 3) = 4x^2 + 2x + 4.$
- **Multiplication:**
  $(3x^2 + 1) \times (1x^2 + 2x + 3) = 3x^4 + 6x^3 + 9x^2 + x^2 + 2x + 3 = 3x^4 + 6x^3 + 10x^2 + 2x + 3$