

LAB14-03b

Polynomial calculator

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Description

Write a program that repeatedly reads coefficient-exponent pairs, calculates two polynomial and display the final result of polynomial.

Input

Almost the same inputs of 'LAB14-03a'. The input contains several lines of integer values. In each line, we add first polynomial to second polynomial. The first value of each polynomial will be number n of pairs. Values are separated by white spaces.

For example, a line of testing data contains

$$n \ c_1 \ e_1 \ c_2 \ e_2 \ c_3 \ e_3 \ c_4 \ e_4 + n \ c_5 \ e_5 \ c_6 \ e_6$$

Output

You have to output three polynomial in descending order. Each polynomial are separated by one white spaces. If the coefficient or exponent value is 1, do not print for it.

Sample input

```
1 15 6 + 1 5 6
3 2 3 -1 1 6 0 + 3 1 4 -6 3 7 1
```

Sample output

```
15x^6 5x^6 20x^6
2x^3-x+6 x^4-6x^3+7x x^4-4x^3+6x +6
```