Problem K. Streets

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	512 megabytes

You are given n vertical lines with x-coordinates $x_1, x_2, \ldots, x_n$ and weights $a_1, a_2, \ldots, a_n$ and m horizontal lines with y-coordinates $y_1, y_2, \ldots, y_m$ and weights $b_1, b_2, \ldots, b_m$.

Call a rectangle good if and only if all of its four edges lie on the given lines. On this basis, define the cost of a good rectangle as the sum of the costs of its four segments. The cost of a segment is the product of its length and the weight of the line it belongs.

Find the maximum area of good rectangles with cost no more than c. Note that the length and the width of the rectangle can be zero, so the answer always exists.

You need to answer T queries with different c.

Input

The first line contains three integers n, m $(2 \le n, m \le 5\,000)$ and T $(1 \le T \le 100)$.

The second line contains n integers $x_1, x_2, \ldots, x_n$ $(1 \le x_1 < x_2 < \ldots < x_n \le 10^5)$.

The third line contains n integers $a_1, a_2, \ldots, a_n$ $(1 \le a_i \le 10^7)$.

The fourth line contains m integers $y_1, y_2, \ldots, y_n$ $(1 \le y_1 < y_2 < \ldots < y_n \le 10^5)$.

The fifth line contains m integers $b_1, b_2, \ldots, b_n$ $(1 \le b_i \le 10^7)$.

Each of the next T lines contains a single integer c $(1 \le c \le 4 \times 10^{12})$, representing a query.

Output

For each query, output one line representing the answer.

Example

standard input	standard output
3 4 20 1 3 4 3 1 2 1 3 4 7 4 2 1 2 1 5 6 7 9 10 11 12 15 16 17 22 23 28 30 35 43 47 49 57	0 0 1 1 1 2 2 3 3 4 4 6 6 9 9 12 12 12 18 18