# Problem B. Assignment

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

You are given two sequences $a, b$ of length $n$ and a cost matrix $A$ of size $n \times n$. **The matrix $A$ satisfies $A_{i,j} \geq A_{i,j-1}$ for all** $1 \leq i \leq n, 1 < j \leq n$. You can do the following operation arbitrary number of times:

- Select three integers $l, r, x$ satisfying $1 \leq l \leq r \leq n$ and $1 \leq x \leq n$, then assign $x$ to $a_i$ for all indices $i$ between $l$ and $r$, inclusive. The cost of this operation is $A_{x,r-l+1}$.

For all $i \in [0, k]$, find the minimum sum of costs to make $a$ has at most $i$ positions differing from $b$.

## Input

The first line contains a single integer $T$ ($1 \leq T \leq 10$), denoting the number of test cases.

For each test case, the first line contains two integers $n, k$ ($1 \leq n \leq 100$, $1 \leq k \leq 10$).

The second line contains $n$ integers $a_1, a_2, \cdots, a_n$ ($1 \leq a_i \leq n$), denoting the sequence $a$.

The third line contains $n$ integers $b_1, b_2, \cdots, b_n$ ($1 \leq b_i \leq n$), denoting the sequence $b$.

The next $n$ lines, each contains $n$ integers. The $j$-th integer in the $i$-th line denotes $A_{i,j}$ ($1 \leq A_{i,j} \leq 10^6$).

It is guaranteed that for all $1 \leq i \leq n$, $1 < j \leq n$, $A_{i,j} \geq A_{i,j-1}$.

## Output

For each test case, output one line with $k + 1$ integers denoting the answer.

## Example

| standard input | standard output |
|---|---|
| 1<br>5 2<br>1 5 3 2 2<br>2 4 5 4 2<br>3 3 3 4 4<br>2 2 3 4 5<br>3 4 5 6 7<br>1 1 1 2 4<br>4 5 5 5 5 | 7 3 1 |