

Problem E - Excellent Gifts

There are still too many balloons, so Daniel figures they make excellent gifts. He's started a website that does balloon delivery services. He's convinced a few members of the ACM team to help do deliveries. In compensantion he's going to pay them proportional to the distance to travel for each order.

Daniel has carefully taken balloon orders in such a way that between order i and order j if $i < j$, then it is always possible to deliver balloons to the i th order before delivering balloons to the j th order. This way, a member of the ACM team can pick up multiple balloons to do multiple deliveries at once.

Help Daniel minimize the cost on his deliveries.

Input

The first line contains a single integer T the number of test cases.

Each test case begins with two integers n and k ($1 \leq n, k \leq 100$) the number of requests and the number of ACM team members helping Daniel with the deliveries. Following this will be n lines where the i th line contains $n - i + 1$ integers between 0 and 1000000 inclusive. The j th number in the i th line is the cost of delivering balloons between location i to location $i + j$.

Daniel has all his balloons at location 1, and he needs to make deliveries to location 2 to $n + 1$.

Output

For each test case, output the minimum cost to deliver all the requests.

Sample Input

```
2
3 2
40 30 40
50 10
50
3 2
10 10 10
20 21
21
```

Sample Output

```
80
40
```
