

Problem H. Points

Input file: *standard input*
Output file: *standard output*
Time limit: 4 seconds
Memory limit: 512 mebibytes

You are given n triples of non-negative integers a_i, b_i, c_i ($1 \leq i \leq n$) and a positive integer $k \leq n$. Your task is to find the set of indices $1 \leq i_1 < i_2 < \dots < i_k \leq n$ such that $\left(\sum_{j=1}^k a_{i_j}\right)^2 + \left(\sum_{j=1}^k b_{i_j}\right)^2 + \left(\sum_{j=1}^k c_{i_j}\right)^2$ is maximized. Print the maximum possible value of this sum.

Input

The first line of the input contains a positive integer T , the number of test cases.

The first line of each test case consists of two integers n and k ($1 \leq k \leq n \leq 40$). Each of the next n lines contains one triple of non-negative integers a_i, b_i and c_i ($0 \leq a_i, b_i, c_i \leq 10^6$).

It is guaranteed that the sum of all values of n in the input does not exceed 200.

Output

For each test case, on the first line, write one integer: the answer to the problem. On the next line, print k integers $1 \leq i_1 < i_2 < \dots < i_k \leq n$ representing the set of indices on which the answer is achieved.

Example

standard input	standard output
2	146
3 1	2
4 2 6	394
4 9 7	2 3
6 4 2	
3 2	
7 3 2	
8 2 4	
4 7 9	