Problem A. Merge Servers

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

A certain MMO game has n servers (where n is an **even** number), with the i-th server opened on day i, and currently has a_i active players. The older the server, the fewer active players it has (in other words, a_i is a non-decreasing sequence).

Noticing that some servers currently have too few players, the publisher has decided to pair these n servers into $n/2$ pairs and merge the servers in each pair to create a new server with the number of players equal to the sum of the players from the two old servers. The publisher wants the difference in the number of players between the most populated server and the least populated server after merging to be as small as possible. Additionally, to avoid imbalances among players on the server, the opening days of the two servers being merged must not differ by more than k days ($1 \le k \le \frac{n}{4}$).

Please find a way to pair the servers such that the aforementioned difference in the number of players is minimized. If there are multiple ways to pair the servers that satisfy the condition for the smallest player difference, any valid pairing will suffice.

Input

Each test consists of multiple test cases. The first line contains the number of test cases t ($1 \le t \le 10$). The description of each test case is as follows.

The first line contains two integers n and k ($4 \le n \le 200$, n is even, $1 \le k \le \frac{n}{4}$) — the number of servers and the maximum number of days apart between two servers that can be merged.

The next line consists of n integers $a_1, a_2, \ldots, a_n$ ($1 \le a_1 \le a_2 \le \ldots \le a_n \le 10^9$) — the number of active players on the servers.

It is guaranteed that the sum of n across all test cases does not exceed 200.

Output

For each test case, the first line should output an integer indicating the difference in the number of players between the most populated server and the least populated server.

The i-th of the next $n/2$ lines should output two integers a_i, b_i ($1 \le a_i, b_i \le n$, $a_i \ne b_i$, $|a_i - b_i| \le k$) — the two servers selected in the i-th pair. Each server must appear exactly once in the $n/2$ pairs.

If there are multiple ways to pair the servers that satisfy the condition for the smallest player difference, any valid pairing will suffice.

Scoring

Subtask	Score	Constraints
1	250	$n \le 16$
2	250	No additional constraints
Total	500	

Example

standard input	standard output
2 4 1 1 5 9 10 8 2 2 4 4 5 6 7 7 8	13 1 2 3 4 9 1 2 3 5 4 6 7 8

Note

In the first test case, the number of players on the new servers after merging is $[a_1 + a_2, a_3 + a_4] = [1 + 5, 9 + 10] = [6, 19]$. The difference in the number of players between the most populated server and the least populated server is $19 - 6 = 13$. Note that the pairing of servers into two pairs $(1, 4)$ and $(2, 3)$ is invalid because the difference in opening days between servers 1 and 4 exceeds $k = 1$.

In the second test case, the number of players on the new servers after merging is

$$\begin{array}{rl} & [\ a_1 + a_2,\ a_3 + a_5,\ a_4 + a_6,\ a_7 + a_8\ ] \\ = & [\ 2 + 4,\ 4 + 6,\ 5 + 7,\ 7 + 8\ ] \\ = & [\ 6,\ 10,\ 12,\ 15\ ] \end{array}$$

The difference in the number of players between the most populated server and the least populated server is $15 - 6 = 9$.