Imbalanced Teams

Input file:	`standard input`
Output file:	`standard output`
Time limit:	4 seconds
Memory limit:	1024 megabytes

There are n players who regularly attend volleyball practice. Coach Igor knows their abilities well: a_i is the skill level of the i-th player. Each practice session consists of a series of matches, and for each match the coach selects two disjoint teams of k players each. The skill level of a team is defined as the sum of the skill levels of all its players.

The coach has noticed that the larger the difference (that is, the absolute value of the difference) between the teams' skill levels, the faster the match ends. Faster matches mean more games can be played in a single practice session! Thus he decided to select teams in such a way that maximizes the difference in their skill levels.

Help Igor plan the entire practice session. Find the maximum possible difference between the skill levels of two teams, and then count the number of matches that achieve this maximum, modulo $10^9 + 7$.

Matches cannot be repeated, meaning two teams can play against each other at most once. For example, for $n = 4$ and $k = 2$ there are only three possible matches: players 1 and 2 play against players 3 and 4; or players 1 and 3 play against players 2 and 4; or players 1 and 4 play against players 2 and 3.

Input

The first line contains two integers n and k ($2 \le n \le 2000$; $1 \le k \le \frac{n}{2}$) representing the number of available players and the size of each team respectively.

The second line contains n integers $a_1, a_2, \ldots, a_n$ ($1 \le a_i \le 10^6$), the skill levels of each player.

Output

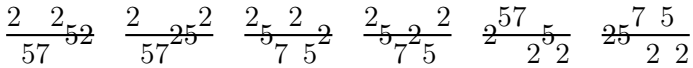
Output two integers – the maximum difference in team skill levels and the remainder when the number of matches that achieve this maximum is divided by $10^9 + 7$.

Examples

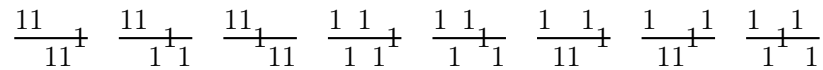
standard input	standard output
6 2 2 5 7 2 5 2	8 6
5 2 1 1 1 1 1	0 15

Note

In the first sample test the coach selects two teams of $k = 2$ players for each match. He can organize 6 matches with a skill level difference of 8. The matches are shown in the diagram below. For example, in the first match players 1 and 4 play against players 2 and 3, and the skill level difference is: $|(a_1 + a_4) - (a_2 + a_3)| = |(2 + 2) - (5 + 7)| = 8$.



In the second sample test all players have the same skill level, so the difference between the teams' skill levels is always 0. Thus all 15 possible matches have the maximum difference of 0:



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