

Maximize Diversity of an Array

Problem Statement

You are given an array A . The **diversity** of the array A is defined as the number of pairs i, j ($i < j$) such that $A_i \neq A_j$.

You want to maximize the diversity of the array. For that, you are allowed to make at most K operations on it. In each operation, you can select a particular element and change its value to any integer in the range 1 to 10^9 , both inclusive.

Find out the maximum diversity of the array that you can obtain.

Input Format

- The first line contains T , the number of test cases.
- Each test case consists of:
 - The first line contains two integers N, K , where N is the length of the array A , and K is the maximum number of operations allowed.
 - The second line contains N space-separated integers representing the elements of the array A .

Output Format

For each test case, output a single line containing an integer corresponding to the maximum possible diversity of the array.

Constraints

- $1 \leq T \leq 20$
- $0 \leq K \leq 10^9$
- $2 \leq N \leq 10^5$
- $1 \leq A_i \leq 10^9$

Example Input

```
3
3 10
1 2 3
4 2
1 1 2 2
6 2
2 3 3 2 4 4
```

Example Output

```
3
6
14
```

Explanation

Testcase 1: The array is already diverse, and no operations are required. Hence, the answer is 3.

Testcase 2: By performing 2 operations, you can make all the elements distinct (e.g., change 1 to 3 and 2 to 4). Hence, the maximum diversity is 6.

Testcase 3: With 2 operations, you can maximize the distinctness of the array to achieve a diversity of 14.