

Help BTW

BTW wants to buy a gift for her BF and plans to buy an integer array. Generally Integer arrays are costly and hence bought the cheapest one from the market. Her BF is very judgemental and assess the quality of the array by just looking at the **smallest element** in the array. Hence, she decided to improve the quality of the array. Increment operation on array elements are very costly and would take **ONE FULL DAY** to complete. Also, Increment operations can be done in parallel on **at most M consecutive** array elements. She only has **K** days left. Help BTW calculate the **maximum possible “quality”** of the array she can attain.

(BTW BTW is the name of the character :P)

Input

Very first line contains T – (number of test cases)

First line in each test case contains N – (size of the array BTW has bought from the market), M, K (days left)

Second line in each test case contains N integers (values of the initial array BTW bought from the market)

Output

Print the maximum possible “quality” she can attain.

Constraints

$$1 \leq T \leq 100$$

$$1 \leq N \leq 10^5$$

$$0 \leq M \leq N$$

$$0 \leq K \leq 10^9$$

$$0 \leq \text{Values of array} \leq 10^9$$

Example

Sample test case 1

Input

3 2 1

2 2 3

Output

3

Sample test case 2

Input

3 2 1

2 3 2

Output

2