Angry Children



Problem Statement

Bill Gates is on one of his philanthropic journeys to a village in Utopia. He has *N* packets of candies and would like to distribute one packet to each of the *K* children in the village (each packet may contain different number of candies). To avoid any fighting among the children, he would like to pick *K* out of *N* packets, such that *unfairness* is minimized.

Suppose the K packets have $(x_1, x_2, x_3,...,x_k)$ candies in them, where x_i denotes the number of candies in the i^{th} packet, then we define *unfairness* as

$$max(x_1, x_2,...x_k) - min(x_1, x_2,...x_k)$$

where *max* denotes the highest value amongst the elements, and *min* denotes the least value amongst the elements. Can you figure out the minimum *unfairness* and print it?

Input Format

The first line contains an integer N.

The second line contains an integer K. N lines follow. Each line contains an integer that denotes the candy in the n^{th} $(1 \le n \le N)$ packet.

Output Format

An integer that denotes the minimum possible value of unfairness.

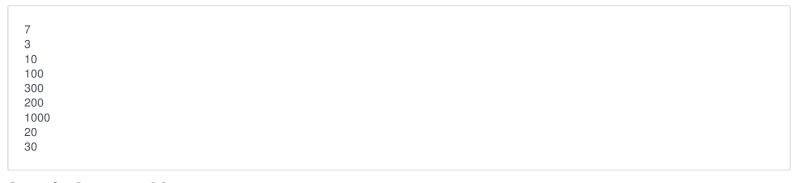
Constraints

 $1 <= N <= 10^5$

1 <= K <= N

 $0 \le \text{number of candies in any packet} \le 10^9$

Sample Input #00



Sample Output #00

20

Explanation #00

Here K = 3. We can choose packets that contain 10,20,30 candies. The unfairness is

max(10,20,30) - min(10,20,30) = 30 - 10 = 20

Sample Input #01

4
1
2
3
4
10
20
30
40
100
200

Sample Output #01

3

Explanation #01

Here K = 4. We can choose the packets that contain 1,2,3,4 candies. The unfairness is

 $\max(1,2,3,4) - \min(1,2,3,4) = 4 - 1 = 3$