Max Min



Problem Statement

Given a list of N integers, your task is to select K integers from the list such that its unfairness is minimized.

if $(x_1, x_2, x_3, \dots, x_k)$ are K numbers selected from the list N, the unfairness is defined as

$$max(x_1, x_2, \ldots, x_k) - min(x_1, x_2, \ldots, x_k)$$

where max denotes the largest integer among the elements of K, and min denotes the smallest integer among the elements of K.

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 belongs to the list N.

Note

Integers in the list N may not be unique.

Output Format

An integer that denotes the minimum possible value of unfairness.

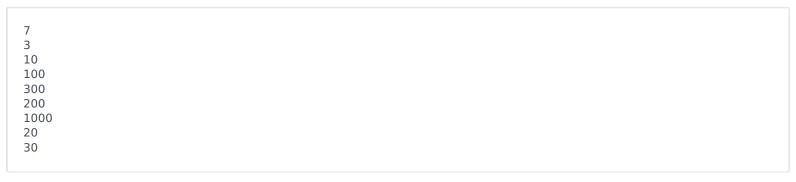
Constraints

 $2 < N < 10^5$

2 < K < N

 $0 \le integer in N \le 10^9$

Sample Input #00



Sample Output #00

20

Explanation #00

Here K=3, selecting the 3 integers such that K=10,20,30 candies. The unfairness is

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

Sample Input #01

4	Γ
1	
2	
3	
4	
10	
20	
30	
40	
100	
200	

Sample Output #01

3

Explanation #01

Here K=4 , selecting the 4 integers 1,2,3,4 . The unfairness is

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

Sample Input #02

```
6
3
10
20
30
100
100
101
102
```

Sample Output #02

2

Explanation #02

Here K=3, 3 integers such that the difference between the maximum and the minimum is smallest is 100,101,102

 $\max(100, 101, 102) - \min(100, 101, 102) = 102 - 100 = 2$