COCI '12 Contest 4 #4 Razlika

Time limit: 0.5s **Memory limit:** 64M

Mirko's newest math homework assignment is a very difficult one! Given a sequence, V, of N integers, remove exactly K of them from the sequence. Let M be the largest difference of any two remaining numbers in the sequence, and m the smallest such difference. Select the K integers to be removed from V in such a way that the sum $M + m$ is the smallest possible. Mirko isn't very good at math, so he has asked you to help him!

Input Specification

The first line of input contains two positive integers, N $(3 \leq N \leq 1\,000\,000)$ and K $(1 \leq K \leq N - 2)$.

The second line of input contains N space-separated positive integers – the sequence V $(-5\,000\,000 \leq V_i \leq 5\,000\,000)$.

Output Specification

The first and only line of output must contain the smallest possible sum $M + m$.

Sample Input 1

```
5 2
-3 -2 3 8 6
```

Sample Output 1

```
7
```

Sample Input 2

```
6 2
-5 8 10 1 13 -1
```

Sample Output 2

```
13
```

Sample Input 3

```
6 3
10 2 8 17 2 17
```

Sample Output 3

```
6
```