# Lord Indra Rain Problem

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|---|---|
| Input file: | `standard input` |
| Output file: | `standard output` |
| Time limit: | 1 second |
| Memory limit: | 256 megabytes |

You are lord Indra and you want to cause rain in a village. There $n$ festivals when the villagers worship you, say festival $i$ occurs on date $t_i$. (for $i < j$, $t_i < t_j$)You want to cause rain on exactly $k$ of these festivals. Each time you cause rain, the villagers become complacent and may stop worshipping you. You don't want this to happen, so you want the minimum duration between two consecutive rains to be as long as possible (assume that you have to cause rain on the very first festival).

Hence, you want to assign the $k$ rains to the festivals such that the minimum duration between any pair of rains is as long as possible.

## Input

The first line of the input contains two integers $n$ ($2 \leq n \leq 10^5$) and $k$ ($2 \leq k \leq n$) separated by space. The second line of each test case contains n integers $t_1, t_2, ...., t_n$ —($1 \leq t_i \leq 10^9$) — dates at which ith festival occurs.

## Output

Print one integer — the minimum duration.

## Examples

| standard input | standard output |
|---|---|
| 3 2<br>1 5 9 | 8 |
| 6 3<br>7 11 15 25 37 50 | 18 |