Covering with intervals P76554_en

Given a natural k and several numbers $x_1, \ldots, x_n$, we want to find the smallest possible set of closed intervals of length k that cover those numbers. In other words, we must find a set of intervals $\{[y_1, y_1 + k], \ldots, [y_m, y_m + k]\}$ such that

- for every x_i, there exists some j such that $x_i \in [y_j, y_j + k]$;
- m is minimum.

For instance, if $k = 10$ and the x_i's are 14, 19, 23 and 27, a possible solution is $\{[12, 22], [1.8, 2.8]\}$, since every x_i belongs to (at least) one of the two intervals, and it is not possible to cover the four numbers with a single interval.

Input

Input consists of several cases, each of which starts with k, followed by n, followed by n different numbers. All numbers in the input are integers. Assume $1 \leq k, n \leq 10^5$.

Output

For every case, print the minimum number of closed intervals of length k that cover the given numbers.

Sample input

```
10  4  14 19 23 27
100 6  175 350 50 300 150 20
10  2  -25 -35
```

Sample output

```
2
3
1
```

Problem information

Author : Enric Rodriguez
Translator : Enric Rodriguez
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