Petrol stations
P40710_en

A car driver needs to plan a journey following a highway. With the tank full he can drive for at most x kms. Knowing the location of the n petrol stations on the road, which is the minimum number of refill stops necessary to travel for at least D kms? Assume that, initially, the tank of the car is full of gasoline.

Input

Input is all natural numbers, and consists of several cases. Every case begins with x and D, followed by n, followed by the distances in kms from the departure point to each petrol station. Assume $x > 0$, $D > 0$, $n \leq 10^5$, and that all the given distances are different and between 1 and $D - 1$. For all the given cases, it is always possible to reach the km D.

Output

For every case, print the minimum number of stops to travel for at least D kms.

Sample input 1

```
2 5
3    1 3 4
3 10
4    1 8 6 4
15 10
6    5 2 9 4 1 3
```

Sample output 1

```
2
4
0
```

Problem information

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