HCI '16 - Xorpow

Who wouldn't love to have powers? Especially ones that are unique and exclusive?

Your task today is related.

Given an array A of N numbers, count the number of ranges that have an XOR-sum which is a positive power of K. (XOR = eXclusive-OR).

Input Specification

The first line contains two integers, N and K, the number of integers and the base.

The second line contains N space-separated integers, representing the numbers of the array.

Output Specification

The output should contain one line containing one integer, the number of ranges with a xor-sum that is a positive power of K.

Constraints

For all subtasks:

$0 \le A_i \le 100$

$2 \le K \le 100$

Subtask 1 [19%]

$1 \le N \le 1\,000$

$K = 2$

Subtask 2 [29%]

$1 \le N \le 1\,000$

Subtask 3 [52%]

$1 \le N \le 10^5$

Subtask 4 [0%]

Sample test cases.

Sample Input

```
4 2
1 7 2 9
```

Sample Output

```
2
```

Explanation

The ranges are $\{2\}$ and $\{1, 7, 2\}$.