

Xorpow

Points:	12 (partial)	Problem types	Data Structures, Intermediate Math
Time limit:	1.0s	Allowed languages	All
Memory limit:	256M		

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 a XOR-sum which is a positive power of K . (XOR = eXclusive-OR).

Input Format

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 Format

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

Subtasks

For all subtasks, $0 \leq A_i \leq 100$; $2 \leq K \leq 100$.

Subtask 1 (19%): $1 \leq N \leq 1000$; $K = 2$.

Subtask 2 (29%): $1 \leq N \leq 1000$.

Subtask 3 (52%): $1 \leq N \leq 10^5$.

Subtask 4 (0%): Sample Testcases.

Sample

Input

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

Output

2

Explanation

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