

Time Limit: 1000ms
Memory Limit: 256MB

G - Legendary

Submissions

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Essa has presented you with one of his 3 legendary problems, you'll be given an array A of n non-negative integers, an integer d , and he asks you to find m , defined as:

The size of the largest subset of elements S you can pick from A such that the following three conditions are satisfied:

- The bitwise AND of all of the elements in the chosen set S is equal to d ($S_1 \& S_2 \& S_3 \& \dots \& S_m = d$)
- The bitwise OR of all of the elements in the chosen set S is equal to d ($S_1 | S_2 | S_3 | \dots | S_m = d$)
- The bitwise XOR of all of the elements in the chosen set S is equal to d ($S_1 \oplus S_2 \oplus S_3 \oplus \dots \oplus S_m = d$)

Input

The first line will contain two integers n and d ($1 \leq n \leq 2 * 10^5, 0 \leq d \leq 10^9$).

The second line will contain n space-separated integers, the contents of the array ($0 \leq A_i \leq 10^9$).

Output

If there's no such subset of elements, print the integer 0. Otherwise, print the maximum possible size of a subset S that satisfies the given conditions.

Samples

Input	Output
<div>4 3 1 2 3 4</div>	<div>1</div>
<div>2 3 1 2</div>	<div>0</div>