B. "Or" Game

You are given n numbers a_1, a_2, ..., a_n. You can perform at most k operations. For each operation you can multiply one of the numbers by x. We want to make as large as possible, where denotes the bitwise OR.

Find the maximum possible value of after performing at most k operations optimally.

Input

The first line contains three integers n, k and x ($1 \leq n \leq 200\,000$, $1 \leq k \leq 10$, $2 \leq x \leq 8$).

The second line contains n integers a_1, a_2, ..., a_n ($0 \leq a_i \leq 10^9$).

Output

Output the maximum value of a bitwise OR of sequence elements after performing operations.

Examples

input
```
3 1 2
1 1 1
```
output
```
3
```

input
```
4 2 3
1 2 4 8
```
output
```
79
```

Note

For the first sample, any possible choice of doing one operation will result the same three numbers 1, 1, 2 so the result is .

For the second sample if we multiply 8 by 3 two times we'll get 72. In this case the numbers will become 1, 2, 4, 72 so the OR value will be 79 and is the largest possible result.