

x-Xor It!

Given an array of n integers and a number x . Your task is very simple. You have to find the subarray (length >0) whose xor is maximum with x . Lets say the subarray as maxsubarray. You have to print the xor value of maxsubarray.

Input

first line of input consists of t test cases

second line of input contains two integers n and x .

third line contains n space separated integers denoting the elements of array

Output

first and only line of output is Xor value of maxsubarray.

Constraints

$$1 \leq t \leq 10$$

$$1 \leq n \leq 200000$$

$$1 \leq x \leq 2 \cdot 10^9$$

$$1 \leq \text{arr}[i] \leq 2 \cdot 10^9 \text{ where } \text{arr}[i] \text{ is any integer of array}$$

Example

Input:

```
1
3 7
1 2 3
```

Output:

```
0
```

taking 1^2^3 is 0 when taken xor with 7 gives us the maximum xor value.