

## Problem K. XOR Clique

Input file:            **standard input**  
 Output file:          **standard output**  
 Time limit:           **1 second**  
 Memory limit:        **256 megabytes**

BaoBao has a sequence  $a_1, a_2, \dots, a_n$ . He would like to find a subset  $S$  of  $\{1, 2, \dots, n\}$  such that  $\forall i, j \in S, a_i \oplus a_j < \min(a_i, a_j)$  and  $|S|$  is maximum, where  $\oplus$  means bitwise exclusive or.

### Input

There are multiple test cases. The first line of input contains an integer  $T$ , indicating the number of test cases. For each test case:

The first line contains an integer  $n$  ( $1 \leq n \leq 10^5$ ), indicating the length of the sequence.

The second line contains  $n$  integers:  $a_1, a_2, \dots, a_n$  ( $1 \leq a_i \leq 10^9$ ), indicating the sequence.

It is guaranteed that the sum of  $n$  in all cases does not exceed  $10^5$ .

### Output

For each test case, output an integer denoting the maximum size of  $S$ .

### Example

standard input	standard output
3	2
3	3
1 2 3	2
3	
1 1 1	
5	
1 2323 534 534 5	