G. Orray

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

You are given an array a consisting of n nonnegative integers.

Let's define the prefix OR array b as the array $b_i = a_1$ OR a_2 OR ... OR a_i, where OR represents the bitwise OR operation. In other words, the array b is formed by computing the OR of every prefix of a.

You are asked to rearrange the elements of the array a in such a way that its prefix OR array is lexicographically maximum.

An array x is lexicographically greater than an array y if in the first position where x and y differ, $x_i > y_i$.

Input

The first line of the input contains a single integer t ($1 \le t \le 100$) — the number of test cases. The description of test cases follows.

The first line of each test case contains a single integer n ($1 \le n \le 2 \cdot 10^5$) — the length of the array a.

The second line of each test case contains n **nonnegative** integers $a_1, \ldots, a_n$ ($0 \le a_i \le 10^9$).

It is guaranteed that the sum of n over all test cases does not exceed $2 \cdot 10^5$.

Output

For each test case print n integers — any rearrangement of the array a that obtains the lexicographically maximum prefix OR array.

Example

input Copy

```
5
4
1 2 4 8
7
5 1 2 3 4 5 5
2
1 101
6
2 3 4 2 3 4
8
1 4 2 3 4 5 7 1
```

output Copy

```
8 4 2 1
5 2 1 3 4 5 5
101 1
4 3 2 2 3 4
7 1 4 2 3 4 5 1
```

Codeforces Round 827 (Div. 4)
Finished
Practice

→ **Virtual participation**

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ **Clone Contest to Mashup**

You can clone this contest to a mashup.

Clone Contest

→ **Submit?**

Language: GNU G++20 13.2 (64 bit, win

Choose file: Choose File No file chosen

Submit

→ **Last submissions**

Submission	Time	Verdict
234639422	Nov/27/2023 23:39	Runtime error on test 1
234639321	Nov/27/2023 23:37	Accepted
234639281	Nov/27/2023 23:37	Accepted
234634593	Nov/27/2023 22:37	Accepted
234632991	Nov/27/2023 22:18	Wrong answer on test 1
234631781	Nov/27/2023 22:03	Wrong answer on test 1
234614493	Nov/27/2023 19:21	Wrong answer on test 1

→ **Problem tags**

bitmasks brute force greedy math sortings *1500

No tag edit access

→ **Contest materials**

- Announcement (en)
- Tutorial (en)