

XOR play

Given an integer, you have to tell all the proper divisors (all divisors except the no. itself) of the number N in sorted manner. You also have to perform XOR operation on all these divisors and print the corresponding result.

Input :

The first line of input contains an integer T denoting the Test cases. Then T test cases follow. Each test case contains an integer N.

Output :

For each test case print 2 lines. In the first line print space separated values denoting the proper divisors of N. Then in the next line print the XOR of all the proper divisors of N.

Constraints :

$$1 \leq T \leq 110$$

$$1 \leq N \leq 10^{12}$$

Example:

Input :

2

10

8

Output :

1 2 5

6

1 2 4

7

Explanation :

Test case 1 : 1 XOR 2 XOR 5 = 6

Test case 2 : 1 XOR 2 XOR 4 = 7