

Reverse Binary Number

In mathematics and digital electronics, a binary number is a number expressed in the base-2 numeral system or binary numeral system, which uses only two symbols: typically 0 (zero) and 1 (one). You are given an integer N and are asked to convert the integer N from decimal base to reverse binary base. Reverse binary base is a binary base of a number that is read from right to left while a normal binary number is read from left to right.

Format Input

Input will consist of integer T which is the number of the test case. The next T line consist a positive integer N.

Format Output

Output your answer with "Case #X: " format and the reverse binary number.

Constraints

$1 \leq T \leq 1000$

It is guaranteed N is positive and N is in unsigned integer range.

Sample Input	Sample Output
7	Case #1: 1
1	Case #2: 01
2	Case #3: 11
3	Case #4: 001
4	Case #5: 101
5	Case #6: 011
6	Case #7: 111
7	

Hint

Binary Number of 4 is 100 while reverse binary number is 001.