Poltu and Bit

Poltu is now so happy, as you helped him completing his homework. So he went out for some fresh air. While he was walking he found a decimal integer number on the street. He picked it and returned home. Oh! I forgot to say that he is very much fond of binary number system. So as soon as he returned home, he converted the decimal into binary and changed every bit of the binary representation i.e. if the bit is *'1'* he changed it to *'0'* and if the bit is *'0'* he changed it to *'1'*. Now he wonders what will be the decimal of the changed binary form!

Suppose he found $(21)_{10}$. Its binary representation is $(10101)_2$. After changing every bit it becomes $(01010)_2$ which is the binary of $(10)_{10}$.

Input
Input starts with an integer T $(1 \le T \le 1000)$, denoting the number of test cases.
Each case contains an integers a $(0 \le a \le 10^{15})$ – the decimal integer that Poltu found.

Output
For each case, print the case number and the decimal of the changed binary form of a.

Sample Input	Sample Output
1 21	Case 1: 10