You will be given a list of 32 bit unsigned integers. Flip all the bits ($1 \rightarrow 0$ and $0 \rightarrow 1$) and return the result as an unsigned integer.

Example

$n = 9_{10}$

$9_{10} = 1001_2$. We're working with 32 bits, so:

$00000000000000000000000000001001_2 = 9_{10}$

$11111111111111111111111111110110_2 = 4294967286_{10}$

Return 4294967286.

Function Description

Complete the flippingBits function in the editor below.

flippingBits has the following parameter(s):

- int n: an integer

Returns

- int: the unsigned decimal integer result

Input Format

The first line of the input contains q, the number of queries.

Each of the next q lines contain an integer, n, to process.

Constraints

$1 \leq q \leq 100$

$0 \leq n < 2^{32}$

Sample Input

```
3
2147483647
1
0
```

Sample Output

```
2147483648
4294967294
4294967295
```

Explanation

Take 1 for example, as unsigned 32-bits is 00000000000000000000000000000001 and doing the flipping we get 11111111111111111111111111111110 which in turn is 4294967294.