Time limit: 1.00 s

Memory limit: 512 MB

Consider an algorithm that takes as input a positive integer n. If $n$is even, the algorithm divides it by two, and if $n$is odd, the algorithm multiplies it by three and adds one. The algorithm repeats this, until $n$is one. For example, the sequence for $n = 3$is as follows:
$3 \rightarrow 10 \rightarrow 5 \rightarrow 16 \rightarrow 8 \rightarrow 4 \rightarrow 2 \rightarrow 1$Your task is to simulate the execution of the algorithm for a given value of n.

Input

The only input line contains an integer n.

Output

Print a line that contains all values of $n$during the algorithm.

Constraints

- $1 \leq n \leq 10^6$

Example

Input:

3

Output:

3 10 5 16 8 4 2 1