Collatz Sequence Simulation

Time Limit: 1.00 s
Memory Limit: 512 MB

Problem Statement

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 becomes one.

For example, the sequence for n=3 is:
3 -> 10 -> 5 -> 16 -> 8 -> 4 -> 2 -> 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 generated during the algorithm, separated by spaces.

Constraints

- 1 <= n <= 1000000

Example

Input
3

Output
3 10 5 16 8 4 2 1

Explanation:
Starting from 3, the algorithm generates the sequence until reaching 1.