

Weird algorithm

Nicolò Alesi

November 2025

Disclaimer

The following problem statement is provided for reference and educational purposes only. It has been copied from CSES and is the intellectual property of its respective authors and the original website. All rights, including copyright, remain with the original creators. This document is not intended for commercial use or redistribution.

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 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

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

Examples

Input:

3

Output:

3 10 5 16 8 4 2 1