

Problem 9: Collatz Conjecture

Objective: The goal of this problem is to write a Python function that calculates the number of steps required to reach 1 using the Collatz conjecture. You will also write a script to read the input from the console and print the output.

Background: The Collatz conjecture is a mathematical sequence defined as follows: start with any positive integer n . Then each term is obtained from the previous term as follows:

- If the previous term is even, the next term is one half of the previous term.
- If the previous term is odd, the next term is 3 times the previous term plus 1.

The conjecture is that no matter what value of n , the sequence will always reach 1.

Task: Write a Python function that takes one parameter n (int) and returns the number of steps required to reach 1 using the Collatz conjecture. Write a script to read the input from the console and print the output.

Input Format:

- n (int): The starting integer.

Output Format:

- The number of steps required to reach 1.

Sample Input:

6

Sample Output:

8