

8th May 2nd Shift
TCS

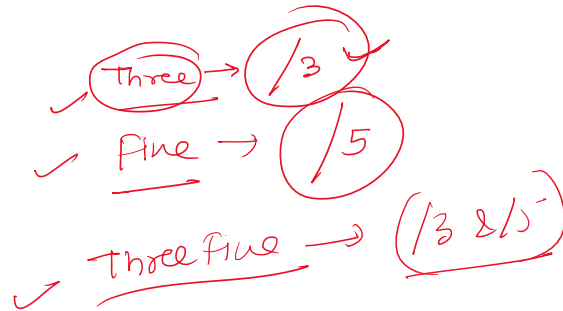
Q1. You are given 4 integer each in new line then change it to Three if it's divisible by 3, to Five if divisible by 5, to ThreeFive if divisible by both 3&5 else keep it same.

Input

2
3
5
15

Output(space separated in same line)

2 Three Five ThreeFive



2 3 5 15
2 Three Five ThreeFive

Collatz Sequence :

→ If the number is even, divide it by two.

If the number is odd, triple it and add one

And keep changing the number until it becomes 1, it's always lead to 1.

Task1

Print collatz sequence →

Task2

A. Print maximum length of collatz sequence for all $1 \leq k \leq n$

B. Print the k who have maximum length collatz sequence

Task3

A. Print maximum value in any collatz sequence for all $1 \leq k \leq n$

B. Print the k whose sequence have maximum value among all value of all sequences for all $1 \leq k \leq n$

Input

N=5

Output

5 16 8 4 2 1, 8 3, 16 3

Explanation

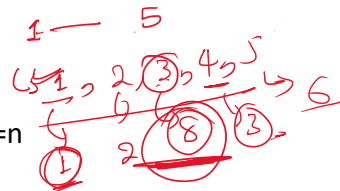
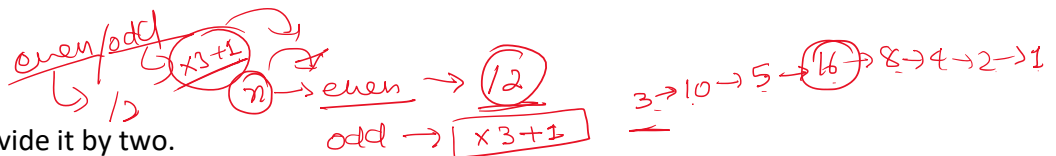
5 16 8 4 2 1 collatz sequence of 5

8 is the maximum length of sequence corresponding to $k=3$ (firstly from this)

16 is the overall maximum value for all sequences and it is of $k=3$ (firstly from this)

Output format

Task1 output space separated, task2 output space separated, task3 output space separated



collatz
vector<int> seq;
while (n != 1)
{
seq.push(n);
if (even)
n = n/2;
if (odd)
n = n*3+1;
}
return seq;

Task 2 Task 1
8 3 16 3
A B A B

No space before or after comma