Collatz Conjecture

Problem ID: a03p04collatzconjecture

Let a be a positive integer and consider the sequence where $x_0 = a$ and

$$x_{n+1} = \begin{cases} x_n/2 & \text{if } x_n \text{ is even} \\ 3x_n + 1 & \text{if } x_n \text{ is odd} \end{cases}$$

The Collatz conjecture states that this sequence will always reach 1.

For example, if $a = 10$, then $x_0 = 10, x_1 = 5, x_2 = 16, x_3 = 8, x_4 = 4, x_5 = 2$ and $x_6 = 1$.

Write a program that reads a positive integer from the user and, using a while loop, outputs each element of the above sequence until it reaches 1.

Input

Input consists of one line with one integer x_0, the initial term of the sequence, where $0 \leq x_0 \leq 100\,000$.

Output

Output consists of one or more lines, where the ith line contains the integer x_i, for $i \geq 0$.

Sample Input 1	Sample Output 1
2	2 1

Sample Input 2	Sample Output 2
3	3 10 5 16 8 4 2 1

Sample Input 3

```
19
```

Sample Output 3

```
19
58
29
88
44
22
11
34
17
52
26
13
40
20
10
5
16
8
4
2
1
```

Sample Input 4

```
25
```

Sample Output 4

```
25
76
38
19
58
29
88
44
22
11
34
17
52
26
13
40
20
10
5
16
8
4
2
1
```