Calculator Games

Filename: `calc`

The Problem

You are given a calculating device that has a single display screen that displays non-negative integers less than 1 billion (upto 9 digits) and three buttons. The three buttons perform the following functions on the current value, x, on the display screen:

(1) Add 1
(2) Multiply by 3
(3) Integer Division by 2

You are given a starting positive integer n < 100 and your goal will be to figure out the minimum number of button presses necessary to reach all of the other positive integers less than 100. Your program should simply output the maximum of all of these numbers, namely, the most number of button presses needed to reach any particular value. Remember that since the display doesn't allow any numbers one billion or greater, no intermediate calculation can arrive at a result equal to or greater than one billion.

Input Format

The first line will contain a single positive integer, n < 100, specifying the number of input cases. Each input case will have a single positive integer, k < 100, on a line by itself representing the starting value for that case.

Output Format

For each test case, on a line by itself, output the desired maximum number of button presses to reach any of the numbers from 1 to 99 for that case.

Sample Input
```
3
1
73
99
```

Sample Output
```
10
11
12
```