1077 - The 3n + 1 Problem

Description

Consider the following algorithm to generate a sequence of numbers. Start with an integer **n**. If **n** is even, divide by 2. If **n** is odd, multiply by 3 and add 1. Repeat this process with the new value of **n**, terminating when **n = 1**. For example, the following sequence of numbers will be generated for **n = 22**: 22 11 34 17 52 26 13 40 20 10 5 16 8 4 2 1It is conjectured (but not yet proven) that this algorithm will terminate at **n = 1** for every integer **n**. Still, the conjecture holds for all integers up to at least 10^6. For an input **n**, the cycle-length of **n** is the total of numbers generated up to and including the 1. In the example above, the cycle length of 22 is 16. Given any two numbers **i and j,** you are to determine the maximum cycle length over all numbers between **i and j,** including both endpoints.

Input specification

The input will consist of a series of pairs of integers **i and j**, one pair of integers per line. All integers will be less than 10^6 and greater than 0.

Output specification

For each pair of input integers **i and j**, output **i, j** in the same order in which they appeared in the input and then the maximum cycle length for integers between and including **i and j.** These three numbers should be separated by one space, with all three numbers on one line and with one line of output for each line of input.

Sample input

```
1 10
100 200
201 210
900 1000
```

Sample output

```
1 10 20
100 200 125
201 210 89
900 1000 174
```

Hint(s)

Source	
Added by	**ejaltuna**
Addition date	2011-10-13 18:33:44.0
Time limit (ms)	2000
Test limit (ms)	1000
Memory limit (kb)	131072
Output limit (mb)	64
Size limit (bytes)	100000
Enabled languages	C C# C++ Java Pascal Perl PHP Python Ruby Text