



## A • Hailstone HOTPO

The *hailstone sequence* is formed in the following way:

- If  $n$  is even, divide it by 2 to get  $n'$
- if  $n$  is odd, multiply it by 3 and add 1 to get  $n'$

It is conjectured that for any positive integer number  $n$ , the sequence will always end in the repeating cycle: 4, 2, 1, 4, 2, 1, ... Suffice to say, when  $n == 1$ , we will say the sequence has ended.

Write a program to determine the largest value in the sequence for a given  $n$ .

### Input

The first line of input contains a single integer  $P$ , ( $1 \leq P \leq 100000$ ), which is the number of data sets that follow. Each data set should be processed identically and independently.

Each data set consists of a single line of input consisting of two space separated decimal integers. The first integer is the data set number. The second integer is  $n$ , ( $1 \leq n \leq 100,000$ ), which is the starting value.

### Output

For each data set there is a single line of output consisting of the data set number, a single space, and the largest value in the sequence starting at and including  $n$ .

Sample Input	Sample Output
4	1 1
1 1	2 16
2 3	3 101248
3 9999	4 100000
4 100000	



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