CCO '01 P3 - Partitions

Time limit: 2.0s **Memory limit:** 64M

Canadian Computing Competition: 2001 Stage 2, Day 1, Problem 3

Given a positive integer k, a partition is a sequence of positive integers in decreasing order whose sum is k. For example, (12), $(2,2,2,2,2,2)$ and $(5,3,2,1,1)$ are all partitions of 12. Given two distinct partitions, $(a_1, a_2, \ldots, a_n)$ and $(b_1, b_2, \ldots, b_m)$, we will say that $(a_1, a_2, \ldots, a_n) > (b_1, b_2, \ldots, b_m)$ if, for the smallest positive integer t such that $a_t \neq b_t$, we have $a_t > b_t$.

This ordering lets us put all the partitions of a given integer k in lexicographical order, where each partition in the ordering is greater than all the partitions before it.

For example, if $k = 5$, the partitions in lexicographical order are

```
(1,1,1,1,1)
(2,1,1,1)
(2,2,1)
(3,1,1)
(3,2)
(4,1)
(5)
```

Given k $(1 \leq k \leq 100)$ and a positive integer a $(1 \leq a \leq 2 \times 10^9)$, you are to find the a^{th} partition in the list of partitions of k sorted in lexicographical order.

Input Specification

The input will consist of a line with N, the number of test cases, followed by N lines, each of the form k a, where k and a are positive integers.

Output Specification

For each test case, your program should output the a^{th} partition in the list of partitions of k, or, if a is greater than the number of partitions of k, output `Too big`.

Sample Input

```
3
1 1
5 4
5 8
```

Sample Output

```
(1)
(3,1,1)
Too big
```