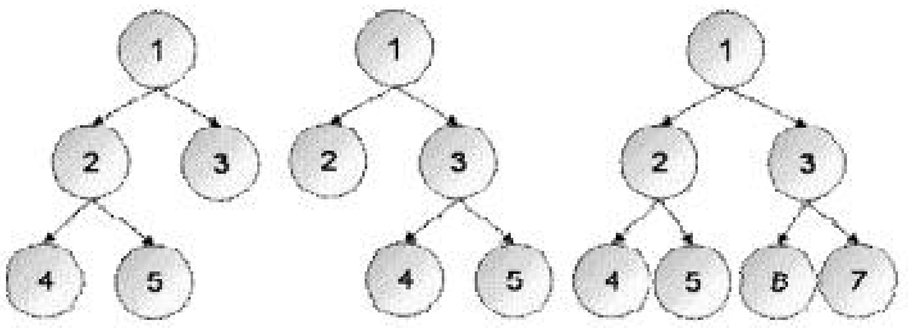
Tree is an important data structure in Computer Science. Of all trees we work with, Binary Tree is probably the most popular one. A Binary Tree is called *Strictly Binary Tree* if every nonleaf node in a binary tree has nonempty left and right subtrees. Let us define a *Strictly Binary Tree of depth* d, as a *Strictly Binary Tree* that has at least one root to leaf path of length d, and no root to leaf path in that tree is longer than d. So let us use a similar reasoning to define a generalized structure.

A n-ary Tree is called *Strictly* n*-ary Tree* if every nonleaf node in a n-ary tree has n children each. A *Strictly* n*-ary Tree of depth* d, then can be defined as a *Strictly* n*-ary Tree* that has at least one root to leaf path of length d, and no root to leaf path in that tree is longer than d.

Given the value of n and depth d, your task is to **find the number of different strictly** n**-ary trees of depth** d.

The figure below shows the 3 different strictly binary trees of depth 2.



Input

Input consists of several test cases. Each test case consists of two integers n ($0 < n \leq 32$), d ($0 \leq d \leq 16$). Input is terminated a test case where $n = 0$ and $d = 0$, you must not process this test case.

Output

For each test case, print three integers, n, d and the number of different strictly n-ary trees of level d, in a single line. There will be a single space in between two integers of a line. You can assume that you would not be asked about cases where you had to consider trees that may have more than 2^{10} nodes in a level of the tree. You may also find it useful to know that the answer for each test case will always fit in a 200 digit integer.

Sample Input

```
2 0
2 1
2 2
2 3
3 5
0 0
```

Sample Output

```
2 0 1
2 1 1
2 2 3
2 3 21
3 5 58871587162270592645034001
```