

<http://www.spoj.com/problems/NY10E/>

SPOJ Problem Set (classical)

8611. Non-Decreasing Digits

Problem code: NY10E



A number is said to be made up of non-decreasing digits if all the digits to the left of any digit is less than or equal to that digit. For example, the four-digit number **1234** is composed of digits that are non-decreasing. Some other four-digit numbers that are composed of non-decreasing digits are **0011**, **1111**, **1112**, **1122**, **2223**. As it turns out, there are exactly 715 four-digit numbers composed of non-decreasing digits.

Notice that leading zeroes are required: 0000, 0001, 0002 are all valid four-digit numbers with non-decreasing digits.

For this problem, you will write a program that determines how many such numbers there are with a specified number of digits.

Input

The first line of input contains a single integer P , ($1 \leq P \leq 1000$), which is the number of data sets that follow. Each data set is a single line that contains the data set number, followed by a space, followed by a decimal integer giving the number of digits N , ($1 \leq N \leq 64$).

Output

For each data set there is one line of output. It contains the data set number followed by a single space, followed by the number of N digit values that are composed entirely of non-decreasing digits.

Example

Input :

```
3
1 2
2 3
3 4
```

Output :

```
1 55
2 220
3 715
```

Added by: [John Mario](#)
Date: 2011-03-22
Time limit: 1s
Source limit: 50000B
Memory limit: 256MB
Cluster: [Pyramid \(Intel Pentium III 733 MHz\)](#)
Languages: All
Resource: ACM Greater New York Regionals 2010

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2013-10-14 07:03:41 [Prashu Chaudhary](#)
very nice problem. Can be solved using little maths!!!!

Last edit: 2013-10-14 07:04:23

2013-09-29 09:58:42 [Anant Kumar](#)
Nice problem. Glad to solve this!

2013-08-27 21:47:11 [Rajat Goyal](#)
my 50th on spoj

2013-08-02 12:19:35 [Shivam Bansal](#)
easy DP :)

2013-06-25 03:40:06 [Ahmad Soliman](#)
Are you kidding me!?! I was getting a WA because am printing the same data set number that is given in the input?!

2013-05-31 23:36:46 [Deinier Morales](#)
nice dp!!!

2013-05-30 01:29:22 [Eduardo Nunes](#)
easy one, output format cost me 3 WAs =-O

2012-09-26 21:31:09 [Utkarsh Chaturvedi](#)
error plz..???
7729376 this the link to my code..!!

2012-08-24 14:40:16 [Piyush Kumar](#)
yes, the code worked in python3. Earlier I was using 2.7.3, maybe differs from 2.7 in that issue

2012-08-24 12:39:04 [Francky](#)
@ Piyush Kumar : Because the server is labelled python2.7, but it could be a python2.5 one. Check if you have a new statement that is unknown in py2.5. (You can too try a py3 translation)

Last edit: 2012-08-24 12:39:37