
Defining Labels

Input file: **standard input**
Output file: **standard output**
Time limit: 1 second
Memory limit: 512 megabytes

Microsoft Excel is a spreadsheet developed by Microsoft. It features calculation, graphing tools, pivot tables, and a macro programming language called Visual Basic for Applications. It has been a very widely applied spreadsheet for many different operating systems, especially since version 5 in 1993, and it has replaced Lotus 1-2-3 as the industry standard for spreadsheets.

In *Excel*, the labelling for columns uses upper case letters instead of numbers to distinguish it from the labelling for rows. The first column in Excel is labelled *A*, the second is labelled *B* and so on. And after column *Z*, the next columns are labelled *AA*, *AB*, \dots , *ZZ*, *AAA*, \dots .

In this problem, we'll define a new labelling scheme. Let's use numerical digits instead of letters, and only a subset of the digits. Let's define base k ($2 \leq k \leq 10$) labelling as using only digits from $10 - k$ to 9 in the labels. For example, the labels in base 10 in ascending order are 0, 1, \dots , 9, 00, 01, \dots , and in base 7 they are 3, 4, \dots , 9, 33, 34, \dots .

Now, given k and X , your task is to find the X -th label in base k .

Input

The input contains multiple cases. The first line of the input contains a single integer T ($1 \leq T \leq 10^5$), the number of cases.

For each case, the first line of the input contains a single integer k ($2 \leq k \leq 10$), the base of the labelling scheme. The second line contains a single integer X ($1 \leq X \leq 10^9$), the number of the label you need to find.

Output

For each case, print a single string in a single line, the X -th label.

Example

standard input	standard output
2	9
10	59
10	
5	
10	