The 1999 British Informatics Olympiad Final
Zig-zag numbers

A *zig-zag* number is one where the digits alternatively rise and fall, always rising initially. For example, there are sixteen zig-zag numbers using the digits 1,...,5:

```
13254    15342    25143    35142
14253    23154    25341    35241
14352    24153    34152    45132
15243    24351    34251    45231
```

Write a program that inputs two numbers : b ($1<=b<=15$) then n. You should calculate the nth zig-zag number (in increasing numerical order) that uses the digits 1,...,b once each. If there are Zb such zig-zag numbers, you will always be given $1<=n<=Zb$. $Z15$ fits into a signed 32-bit integer.

Sample Input 1

5 10

Sample Output 1

25341

Sample Input 2

15 50000000

Sample Output 2

185ebc9fad46273