Beautiful Numbers

An integer N is called beautiful if it consists of 1 and/or 2 and/or 3. Given k (1<=k<=5), your task is to generate recursively all possible beautiful integers of length k sorted in increasing order.Output a blank line after each test case.

Example

Input:
1
2

Output:
1
2
3

11
12
13
21
22
23
31
32
33