

Problem of the Week Grade 9 and 10

Keep on Counting

Digit	0	1	2	3	4	5	6	7	8	9
# Remaining	100	100	100	100	100	100	100	100	100	100

For this problem you have been given 1000 digits made up of 100 zeros, 100 ones, 100 twos, ..., 100 nines. You have 100 of each possible digit.

Start counting by ones, from one. Each time you say a number you must remove the digits required to make the number from your stock pile of digits. For example, after you have counted from 1 to 14, the above table now looks like:

Digit	0	1	2	3	4	5	6	7	8	9
# Remaining	99	93	98	98	98	99	99	99	99	99

What is the largest number you can count to without running out of the digits needed to form the number?

