



## Problem of the Week

### Problem D

#### Some Digit Sums

The *digit sum* of a number is found by, first, summing its digits. If the sum is greater than 9, then the digits of the sum are added. This process is repeated until a single digit number is obtained.

The digit sum of 602 is 8 since  $6 + 0 + 2 = 8$ , and 8 is a single digit number.

The digit sum of 897 is 6. However, it takes two steps to reach this sum. First,  $8 + 9 + 7 = 24$ , which is not a single digit number. Second,  $2 + 4 = 6$ , which is a single digit number and the process stops after the two steps.

How many three-digit numbers have a digit sum of 5 that is reached in three or fewer steps?

