# Kaprekar’s Constant

The Indian number theorist, DJ Kaprekar, discovered this interesting property of 4-digit integers: Take a four-digit number. Arrange the digits in ascending order and descending order. Subtract the smaller from the larger. Repeat the same process with the answer. Astonishingly, four-digit numbers eventually reach the four-digit number 6174. This number is called Kaprekar’s Constant, after its discoverer.

For Example, take the number 4527:

7542 – 2457 = 5085

8550 – 0558 = 7992

9972 – 2799 = 7173

6543 – 3456 = 3087

8703 – 0378 = 8352

8532 – 2358 = 6174

7641 – 1467 = 6174, and the process repeats.

Some numbers do not comply, however. For example 1000 gives 1000 – 0001 = 999 and 999 – 999 = 0. Your program mustn’t crash for these numbers.

Write a program to test if the input reaches Kaprekar’s Constant. You must check that the user has provided a four-digit number.

Source: Wells, D. 1992. The Penguin book of Curious and Interesting Puzzles. London