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## **Factorial digit sum**

Problem 20

21 June 2002

n! means  $n \times (n-1) \times ... \times 3 \times 2 \times 1$ 

For example,  $10! = 10 \times 9 \times ... \times 3 \times 2 \times 1 = 3628800$ , and the sum of the digits in the number 10! is 3 + 6 + 2 + 8 + 8 + 0 + 0 = 27.

Find the sum of the digits in the number 100!