
Perfect primes**P22467_en**

Given a natural number n , let $s(n)$ be the sum of the digits of n . In this exercise, we say that n is a perfect prime if the infinite sequence $n, s(n), s(s(n)), \dots$ only contains prime numbers. For instance, 977 is a perfect prime, because $977, 9 + 7 + 7 = 23, 2 + 3 = 5, 5, \dots$, are all prime numbers.

Write a recursive function that tells if a natural number n is a perfect prime or not.

Interface

C++	bool <i>is_perfect_prime</i> (int n);
C	int <i>is_perfect_prime</i> (int n);
Java	public static boolean <i>isPerfectPrime</i> (int n);
Python	<i>is_perfect_prime</i> (n) # returns bool <i>is_perfect_prime</i> (n : int) \rightarrow bool

Precondition

We have $n \geq 0$.

Observation

You only need to submit the required procedure; your main program will be ignored.

Problem information

Author : Salvador Roura

Translator : Carlos Molina

Generation : 2025-05-13 10:54:38

© Jutge.org, 2006–2025.

<https://jutge.org>