

Euler's totient function, sum of divisors and primes

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Abstract

Here I present a conjecture about Euler's totient function, sum of divisors and primes.

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Conjecture

$\phi(n)$ denotes the Euler's totient function, n denotes a natural number > 1 and $\sigma(n)$ is the sum of the divisors of n . If $\phi(|1 - \sigma(\sigma(n))|) + 1$ ends with 19, 39, 59, 79 or 99 then this number is always prime.

Example

Let $n = 100560228$ we have: $\phi(|1 - \sigma(\sigma(100560228))|) + 1 = 767120639$ which is prime because it ends with 39.