

There not exists odd perfect numbers

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0-Abstract:

Proof by contradiction of non existence of odd perfect numbers by parity comparasion.

1- Introduction:

Is there an old problem to determine the existence or non existence of odd perfect numbers. In this paper I asume the possible form of the descomposition in primes of odd perfect number and logically solve it.

2- The equations:

All perfect odd number should be in the form:

$$(2n+1)^{(2m+1)} \cdot (2k+1) \cdot \dots = \underbrace{(2n+1) \cdot \dots \cdot (2n+1)}_{2m+1} \cdot (2k+1) \cdot \dots$$

So being a variable $\lambda = n, m, k \dots$,

$$\prod_{\lambda \in \mathbb{N}} (2\lambda+1) = \left(\sum \prod_{\lambda \in \mathbb{N}} (2\lambda+1) \right) + 1$$

Should be true to the existence of odd perfect numbers, but we can reduce it to:

$$\prod_{\lambda \in \mathbb{N}} (2\lambda+1) = \left(\sum \prod_{\lambda \in \mathbb{N}} (2\lambda+2) \right)$$

Since $\prod_{\lambda \in \mathbb{N}} (2\lambda+1)$ always will be odd and $\left(\sum \prod_{\lambda \in \mathbb{N}} (2\lambda+2) \right)$ always will be even we have a contradiction, so we assume that there will never exists an odd perfect number. QED.