

题目链接:<https://projecteuler.net/problem=216>

题意

求 $\#\{n \in \mathbb{N} \mid 5 \leq n \leq 5e7 \mid \exists p \text{ prime, } t(n) = 2n^2 - 1 \text{ is prime}\}$

题解

要证明几个关于 $t(n) = 2n^2 - 1$ 的性质: 1、若 $p \mid t(n)$ 则 $p \mid t(n+kp)$ 且 $p \mid t(-n+kp)$

证明:

$$\begin{aligned} t(n+p) - t(n) &= 2(n+p)^2 - 2n^2 \\ &= 2k(2n+k) \end{aligned}$$

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