标签 积性函数 下的文章

🏠 首页 (https://blog.orzsiyuan.com/) / 积性函数

「LOJ 6229」这是一道简单的数学题 (https://blog.orzsiyuan.com/archives/LOJ-6229-Easy-Math-Problem/)

> 题目链接：LOJ 6229 (https://loj.ac/problem/6229)

这是一道非常简单的数学题。

最近 LzyRapx 正在看 *mathematics for computer science* 这本书，在看到数论那一章的时候，LzyRapx 突然想到这样一个问题。

设

$$F(n) = \sum_{i=1}^{n} \sum_{j=1}^{i} \frac{\text{lcm}(i,j)}{\gcd(i,j)}$$

其中，$\text{lcm}(a,b)$ 表示 a 和 b 的最小公倍数，$\gcd(a,b)$ 表示 a 和 b 的最大公约数。

给定 n，让你求：$F(n) \bmod (10^9+7)$ 。

数据范围：$1 \le n \le 10^9$ 。

👤 Siyuan (https://blog.orzsiyuan.com/author/1/)   🕐 2019 年 04 月 28 日

「算法笔记」杜教筛 (https://blog.orzsiyuan.com/archives/Du-Sieve/)

> 杜教筛通过 Dirichlet 卷积，可以计算积性函数的前缀和。

👤 Siyuan (https://blog.orzsiyuan.com/author/1/)   🕐 2019 年 04 月 25 日

「Luogu 5106」dkw 的 lcm (https://blog.orzsiyuan.com/archives/Luogu-5106-Dkw-LCM/)

> 题目链接：Luogu 5106 (https://www.luogu.org/problemnew/show/P5106)

善良的 dkw 决定直接告诉你题面：

$$\prod_{i_1=1}^{n}\prod_{i_2=1}^{n}\cdots\prod_{i_k=1}^{n}\varphi(\mathrm{lcm}(i_1,i_2,\cdots,i_k))$$

请你求上述式子，答案对 10^9+7 取模。

其中 $\mathrm{lcm}(i_1,i_2,\cdots,i_k)$ 表示这 k 个数的最小公倍数。**特别地，一个数的 lcm 是自身。**

数据范围：$1\le n,k\le 10^6$。

👤 Siyuan （https://blog.orzsiyuan.com/author/1/） ⏰ 2019 年 03 月 18 日

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∷ 运行天数	**1年25天**

↻ 最后活动 **4 个月前**

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