

# 莫比乌斯反演

## 常用转换公式

$$\sum_{d=1}^n f(d) \sum_{p=1}^{\lfloor \frac{n}{d} \rfloor} g(p) h(dp) = \sum_{T=1}^n h(T) \sum_{d|T} f(d) g(\frac{T}{d})$$

## 杜教筛公式

$$g(1)S(n) = \sum_{i=1}^n (f * g)(i) - \sum_{i=2}^n g(i) * S(\frac{n}{i})$$

$$\text{其中 } S(n) = \sum_{i=1}^n f(i)$$

## 反演公式

$$\mu * 1 = \epsilon$$

$$\varphi * 1 = \text{id}$$

$$\mu * \text{id} = \varphi$$

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