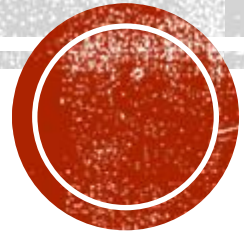
SPHENIC NUMBERS

TOPIC PRESENTATION

17ECSE309 ALGORITHMIC AND PROBLEM SOLVING



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SPHENIC NUMERS :

- Posetive Integers
- Product of exactly 3 **distinct primes.**

- In particular, if p, q , and r are distinct prime numbers then,
    - N = p * q * r then N is a sphenic number.

•The smallest sphenic number is 30 = 2 × 3 × 5

SPHENIC NUMBERS DIVISORS

- They have exactly 8 divisiors , which for sphenic number N = pqr are :
  - 1
  - p
  - q
  - r
  - pq
  - pr
  - qr
  - N

MOBIUS FUNCTION

$$\mu(n) \equiv \begin{cases} 0 & \text{if } n \text{ has one or more repeated prime factors} \\ 1 & \text{if } n = 1 \\ (-1)^k & \text{if } n \text{ is a product of } k \text{ distinct primes,} \end{cases}$$

- Mobius function of Sphenic number is $(-1)^3$ i.e. -1

REFERENCES

- http://mathworld.wolfram.com/SphenicNumber.html
- https://en.wikipedia.org/wiki/Sphenic_number