Class 11

Friday, August 12, 2022 10:12 PM

বিভাজক / Divisor

N=12 ⟶ divisor(12) = 1, 2, 3, 4, 6, 12

N=13 ⟶ divisor(13) = 1, 13

a, b ⟶ div(a) ⟶ common divisor ⟶ max

div(b)

div(12) = 1, 2, 3, 4, 6, 12

div(18) = 1, 2, 3, 6, 9, 18

18, 24

div(24) = 1, 2, 3, 4, 6, 8, 12, 24

gcd(18,24) = gcd(12,18) = gcd(6,12) = g

gcd(0,6) =

gcd(a,b) = gcd(b−a, a) = gcd(2a−b, b−a)

a b

a ≤ b

b − a − 2a + b

= gcd(2b − 3a, 2a − b)

a − b + a

gcd(18,40) = gcd(22,18) =

= gcd(4, 18) = gcd(18, 22)

= gcd(4, 18)

18 | 40 |

40 % 18

18) 40 (2

36

4

b % a = b − a⌊b/a⌋

b − ak ≥ 0

⇒ b ≥ ak

∴ k ≤ b/a

$gcd(a,b) \longrightarrow gcd(b\%a, a)$

$gcd(0,b) \longrightarrow b$

$gcd(18,15) \longrightarrow gcd(15,18)$

$100 \% 51 = 49$

$49 \% 25 = 24$

$24 \% 13 = 12$

$12 \% 7 = 5$

$5 \% 3 = 2$

$2 \% 1 = 0$

$gcd(34,55) \rightarrow gcd(34,21) \rightarrow gcd(21,34) \rightarrow gcd(5,$

$\rightarrow gcd(13,21) \rightarrow gcd(3,$

$\rightarrow gcd(8,13) \rightarrow gcd(2$

$\rightarrow gcd($

$\rightarrow 1$

12	15
24	30
36	45
48	60
60	

$lcm(a,b) \times gcd(a,b)$

26

[2, 3, 5, 7, 11, 2 ... 10, 11, 2, 11^2]

[2 ... 10]

$10^2 = 100$

N = 12

$1 \ldots \sqrt{N}$

1, 25

5, ~~6~~

d	N/d
1	12
2	6
3	4
4	3
x = $\sqrt{N}$	x

$x \cdot x =$

$\Rightarrow x^2 =$

$\therefore x = \sqrt{N}$