UDAAN

2026

REAL NUMBERS

MATHS | LECTURE-1

BY-RITIK SIR

Topic to be covered

1. Factors & Multiples
2. Prime and Composite no.s
3. HCF & LCM using prime factorisation.


WORK HARD
DREAM BIG
NEVER GIVE UP

DOUBTS

Doubt 1. Difference between Standard Maths and Basic Maths?

DOUBTS

Doubt 2. Konsi Books?

1. NCERT
2. Maths handwritten notes.
3. Question bank.

Notes

DOUBTS

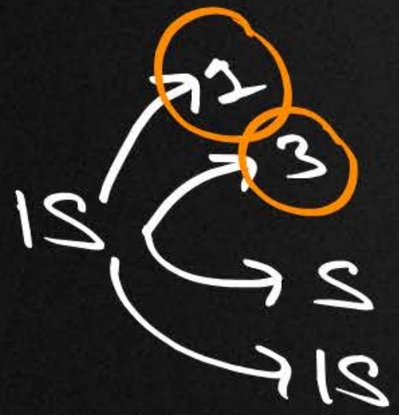
Doubt 3. Aapki strategy to score 100/100 in UDAAN batch?

1. Blindly follow my lectures + DPP
2. Revision → Notes + Question bank
3. Last main Sample papers

Factors

Common factors = 1, 3

Highest common factor = 3



HCF(12, 15) = 3

Multiples

12 = 12, 24, 36, 48, 60 ....

15 = 15, 30, 45, 60, 75 .....

Common multiple = 60, ...

Least common multiple = 60

LCM (12, 15) = 60

Meaning of Finding HCF (a, b)

Sabse bada number jo ‘a’ or ‘b’ dono ko divide karde.

Meaning of Finding LCM (a, b, c)

Sabse chota number jo ‘a’, ‘b’, ‘c’ teeno se divide ho jaiye.

Prime Factorisation

2	180
2	90
3	45
3	15
5	5
	1

$180 = 2 \times 2 \times 5 \times 3 \times 3$

$$180 = 2^2 \times 5^1 \times 3^2$$

2	240
2	120
2	60
2	30
5	15
3	3
	1

$$240 = 2^4 \times 5^1 \times 3^1$$

9	18
2	2
	1

$18 = 9 \times 2$

9 → 3, 9 — composite no.

QUESTION

$5^0 = 1$

#Q. Find the HCF and LCM of 90 and 144 by the prime factorization method.

$90 = 2^1 \times 5^1 \times 3^2$

$144 = 2^4 \times 3^2 \times 5^0$

$HCF = 2^1 \times 5^0 \times 3^2$

$= 18$

$LCM = 2^4 \times 3^2 \times 5^1$

$= 16 \times 9 \times 5$

$= 720$

HCF (90, 144) = 18

LCM (90, 144) = 720

2	90
5	45
3	9
3	3
	1

2	144
2	72
2	36
2	18
3	9
3	3
	1

QUESTION

#Q. Find the HCF and LCM of 144, 180 and 192 by the prime factorization method.

$144 = 2^4 \times 3^2 \times 5^0$

$180 = 2^2 \times 3^2 \times 5^1$

$192 = 2^6 \times 3^1 \times 5^0$

$HCF = 2^2 \times 3^1 \times 5^0$

$= 12$

$LCM = 2^6 \times 3^2 \times 5^1$

$= 2880$

2	144
2	72
2	36
2	18
3	9
3	3
	1

2	180
2	90
3	45
3	15
5	5
	1

2	192
2	96
2	48
2	24
2	12
2	6
3	3
	1

A. 12, 280

B. 12, 2880 ✓

C. 14, 2880

D. NOTA

QUESTION

#Q. Write the smallest number which is divisible by both 306 and 657.

CBSE 2019

LCM (306, 657) = 22338 Ans

3	306
3	102
2	34
17	17
	1

3	657
3	219
73	73
	1

$306 = 3^2 \times 2^1 \times 17^1 \times 73^0$

$657 = 3^2 \times 73^1 \times 2^0 \times 17^0$

$LCM = 3^2 \times 2^1 \times 73^1 \times 17^1$

$= 9 \times 2 \times 73 \times 17 =$

QUESTION

#GPh

Ghar par karo

#Q. Find the prime factorization the LCM of the numbers 18180 and 7575. Also, find the HCF of the two numbers.

CBSE 2023

Prime Numbers

only two factors.

5 → 1, 5

2 → 1, 2

13 → 1, 13

19 → 1, 19

Composite Numbers

more than 2 factors

12 → 1, 2, 3, 4, 6, 12

21 → composite no.

21 → 1, 3, 7, 21

1 → neither prime nor composite

1 → 1

QUESTION

CBSE

$\{-\infty \ldots -2, -1, 0, 1, 2, 3, 4, 5 \ldots \infty\}$

#Q. If two positive integers a and b are expressible in the form $a = pq^2$ and $b = p^3q$, p, q being prime numbers, then LCM(a, b) is:

$a = pq^2 = p^1 \times q^2$

$b = p^3q = p^3 \times q^1$

$HCF(a,b) = p^1 \times q^1 = pq$

$LCM(a,b) = p^3 \times q^2 = p^3q^2$

(A) pq

(B) p^3q^3

(C) p^3q^2 ✓

(D) p^2q^2

QUESTION

#Q. Let x and y be two distinct prime numbers and $p = x^2 y^3$, $q = xy^4$, $r = x^5 y^2$.

Find the HCF and LCM of p, q and r.

CBSE 2025

$P = x^2 \times y^3$

$q = x^1 \times y^4$

$\gamma = x^5 \times y^2$

$HCF(P, q, \gamma) = x^1 y^2 = xy^2$

$LCM(P, q, \gamma) = x^5 y^4$

QUESTION

#Q. If $x = ab^3$ and $y = a^3b$, where a and b are prime numbers, then [HCF (x, y) – LCM(x, y)] is equal to:

CBSE 2025

$HCF(x, y) = ab$

$LCM(x, y) = a^3b^3$

$= ab - a^3b^3$

$= ab(1 - a^2b^2)$

$= ab[(1)^2 - (ab)^2]$

$x^2 - y^2 = (x - y)(x + y)$

$= ab[1 - ab][1 + ab]$

(A) $1 - a^3b^3$

(B) $ab(1 - ab)$

(C) $ab - a^4b^4$

(D) $ab(1 - ab)(1 + ab)$

QUESTION

#GPH

#Q. If $a = 2^2 \times 3^x$, $b = 2^2 \times 3 \times 5$, $c = 2^2 \times 3 \times 7$, and LCM (a, b, c) = 3780, then x =

A 0

B 1

C 2

D 3


2 Ch
10 hrs
1 Ch
5 lectures
10 hrs
20 hrs
2 Chapters
1 Mahina
Thank You