
Nishant Jindal
Welcome
Class 11th
to Apni kaksha
LIVE

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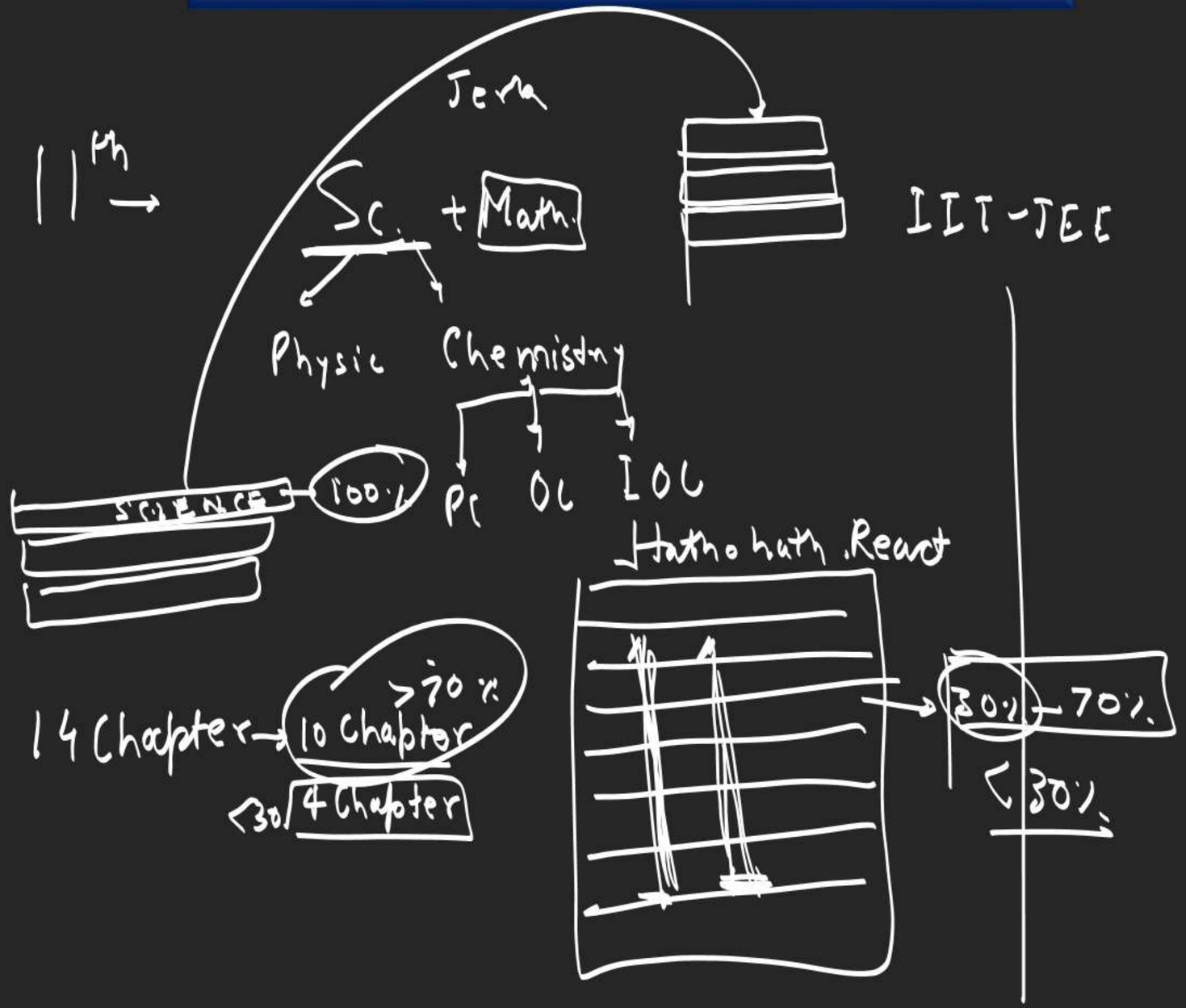
Fundamentals of Mathematics



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Fundamentals of Mathematics

1. Basic Maths.
2. Log
3. Q Eqn.
4. Triyo → 1 .
5. Triyo Eq" → 2 .
6. SoT → 3 .
7. S & P
8. BT
9. STL

50 Qs Adv

2. Circle
9. Pn C .
10. C.S. → 3(h
11. Complex No

11th Mehnat Ka Sa l

Max. Qs Done & Rem.

Online.

Txn

MID Dec.

21 Qs +

Adv + Main + Boards.

Topics →

Front
Notes

Back.
DPP + Ex.

PRELEPCO

S L Loney → Trigo
↳ Coord

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Notes जरूर बनाएँ

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Basic Maths.

Number System.

(1) Natural No :- Rep. by N.

$N = \{1, 2, 3, 4, 5 \text{ — } \infty\}$

(2) Whole No :- Rep. by W

$W = \{0, 1, 2, 3, 4 \text{ — } \infty\}$

(3) Integers → Rep. by I / Z

$I = \{-\infty \text{ — } -3, -2, -1, 0, 1, 2, 3 \text{ — } \infty\}$

-ve Int. | +ve Int.

-ve Int = $I^- = \{-1, -2, -3, -4 \text{ — } -\infty\}$

+ve Int = $I^+ = \{1, 2, 3, 4, 5 \text{ — } \infty\}$

* Rk :- 0 is niether +ve nor -ve Integer.

Nyi Dunia.

Non-ve Int = Int. who are not -ve.

$= \{0, -1, -2, -3 \text{ — } -\infty\}$.

Non+ve Int = Int. who are not +ve.

$= \{0, 1, 2, 3, 4 \text{ — } \infty\}$.

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4) EVEN INT. => Integers div. by 2

{ -4, -2, 0, 2, 4, 6, 8 -- }.

5) ODD Int. => Int. Not divisible by 2

{ -5, -3, -1, 1, 3, 5, 7 -- }

6) PRIME NO :- 1) Prime No. are Natural No

2) Those Natural No. in ho are. either div. by 1 or themself

(3) Prime No have only 2 factors

(4) Prime No. →

2, 3, 5, 7, 11, 13, 17, 19, 23, 29

Rk :- 2 is only Even Prime No.

Q 673 is a Prime No or Not?

$\sqrt{673} \simeq 26$

Prime No B4 26

2, 3, 5, 7, 11, 13, 17, 19, 23

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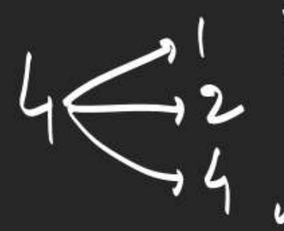
Now, try to divide 673 by 2, 3, 5, 7 ---- 23.

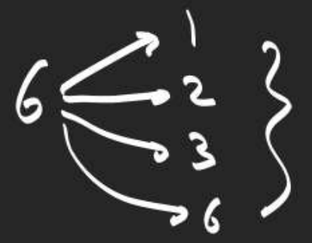
673 is not div by any of them.

$\therefore$ 673 is a prime No.

7) Composite No :- No. having more than 2 factors.

Rk :- 4 is smallest Composite No.





Rk :- 1 is Niether Prime No Composite No.

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(8) Coprime No. = Relative Prime No.

RK :- Any 2 Consecutive No are Coprime No.

2. Natural No having HCF = 1.
are Coprime No.

HCF = Common LENA

HCF (4,7) = 1 => 4 & 7 are Coprime No

HCF (4,8) = 4 => 4 & 8 are not Coprime No.

HCF (4,5) = 1.

HCF (5,6) = 1.

HCF (26,27) = 1.

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(9) Twin Prime No :- any 2 ~~Natural~~ Prime No. with difference = 2

(3, 5) , (5, 7) , (11, 13) , (17, 19)

diff = 2

(10) Rational No.

A) If P & Q are 2 Integers in the form of $\frac{P}{Q}$; $Q \neq 0$

then $\frac{P}{Q}$ is Rational No.

(B) Rational No are Rep by Q

(C) Irrational No :- Those which are not Rational

Rep. by Q'

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(1) After solving $\frac{p}{q}$ if No. coming in decimal form then check digits after decimal.

if digit are Repeating then It is $\mathbb{Q}$ $(2.33333\ldots\infty)$ ← Repeat →

if digit after decimal are Limited. {Terminating}. $(2.345) = \mathbb{Q}$ (decimal is Bad 3 digits)

If digits after decimal are N.R.N.T then it is $\mathbb{Q}'$ $= (2.345\ldots)$

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E) π & e are 2 Special Irr No.

$\pi = 3.14159265359\ldots$

Rem:- $\pi \simeq 3.14$ $\quad \pi^2 \simeq 9.86$

$\frac{\pi}{2} \simeq 1.57$

Rk:- 1) $\pi \neq \frac{22}{7}$

2) π is $\mathbb{Q}'$ but $\frac{22}{7}$ is $\mathbb{Q}$

F) Rem:- a Series

12th

$$e^x = 1 + \frac{x}{1!} + \frac{x^2}{2!} + \frac{x^3}{3!} + \frac{x^4}{4!} + \ldots$$

here $1! = 1$

$2! = 2 \times 1 = 2$

$3! = 3 \times 2 \times 1 = 6$.

$4! = 4 \times 3 \times 2 \times 1 = 24$.

$x = 1$

$$e = 1 + \frac{1}{1} + \frac{1}{2} + \frac{1}{6} + \frac{1}{24} + \ldots$$

$\Rightarrow \boxed{e \simeq 2.718}$

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5) $\sqrt{\text{Prime No}} = \text{Irr. No}$

$\sqrt{2}, \sqrt{3}, \sqrt{5}, \sqrt{7} \ldots Q'$

Rk :- 1) Sum, difference, Product or divisim of 2 Rational No is always a Rational No.

$Q + Q = Q$

$Q - Q = Q$

$Q \times Q = Q$

$\frac{Q}{Q} = Q$

2) But In case of 2 Irr. No, Sum, difference, Prod, Divison of 2 Irr. No may be a Rational or Irr. both

$Q' \begin{matrix} + \\ - \\ \times \\ \div \end{matrix} Q' = Q \text{ or } Q'$

(3) Sum, difference, Prod / Div of Rational & Irr is Irr. No.

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1) $2 + \sqrt{3} \longrightarrow \mathbb{Q}'$

$\mathbb{Q} + \mathbb{Q}' = \mathbb{Q}'$

2) $2 - \sqrt{3} \longrightarrow \mathbb{Q}'$

$\mathbb{Q} - \mathbb{Q}' = \mathbb{Q}'$

3) $2\sqrt{3} \longrightarrow \mathbb{Q}'$

$\mathbb{Q} \times \mathbb{Q}' = \mathbb{Q}'$

4) $\frac{2}{\sqrt{3}} \longrightarrow \mathbb{Q}'$

$\mathbb{Q}'$ Irr. No.

5) $2 + \sqrt{3} + \sqrt{5} = \mathbb{Q}'$

$\mathbb{Q}' + \overline{\mathbb{Q}'} \rightarrow \mathbb{Q}'$

6) $(2+\sqrt{3}) + (2-\sqrt{3}) = 4$

$\mathbb{Q}' + \mathbb{Q}' = \mathbb{Q}$

R_K :- Prod/Div of Rational & Irr. may be a Rational No if Rational No is 0

$0 \times \sqrt{3} = 0$

$\mathbb{Q} \times \mathbb{Q}' = \mathbb{Q}$

$\frac{0}{\sqrt{3}} = 0$

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$q + q = q$

$q - q = q$

$q \times q = q$

$\frac{q}{q} = q$

$q' + q'$

$q' - q'$

$q' \times q'$

$\frac{q'}{q'}$

q/q'

$q + q' = q'$

$q - q' = q'$

$q \times q' \rightarrow \boxed{q}/q$

$\frac{q}{q'} \rightarrow q/q'$

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Fundamentals of Mathematics

Kal yahin se start Karenge.

Apne Notes Padhiyega.

Mja AAyegy