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Introduction and Classification of Numbers

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Introduction and
ication of Numbers

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Introduction and
ation of Numbers

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Expectation

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Expectations from this Batch

1. Practical
2.

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Expectations from this Batch

1. ...al
2.

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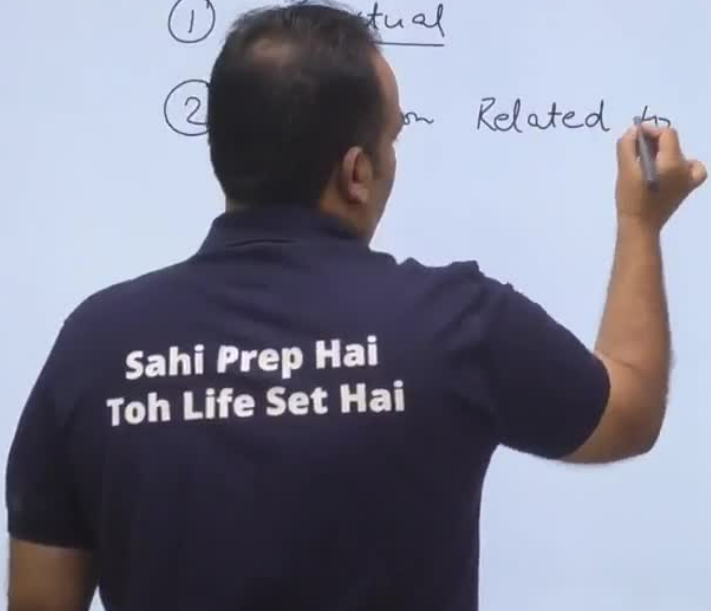
Expectations from this Batch

1. [illegible]tual
2. [illegible]n Related to



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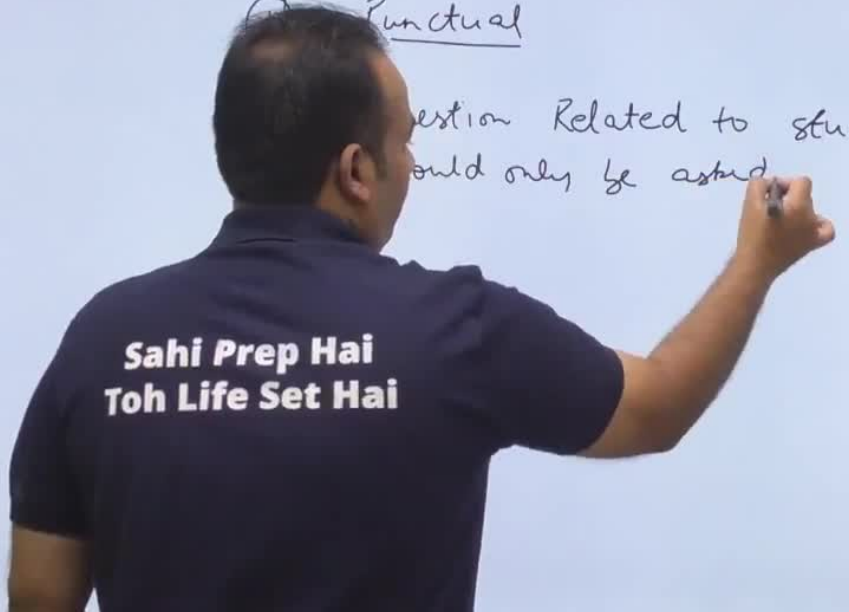
Expectations from this Batch

Punctual

estion Related to studies
ould only be asked



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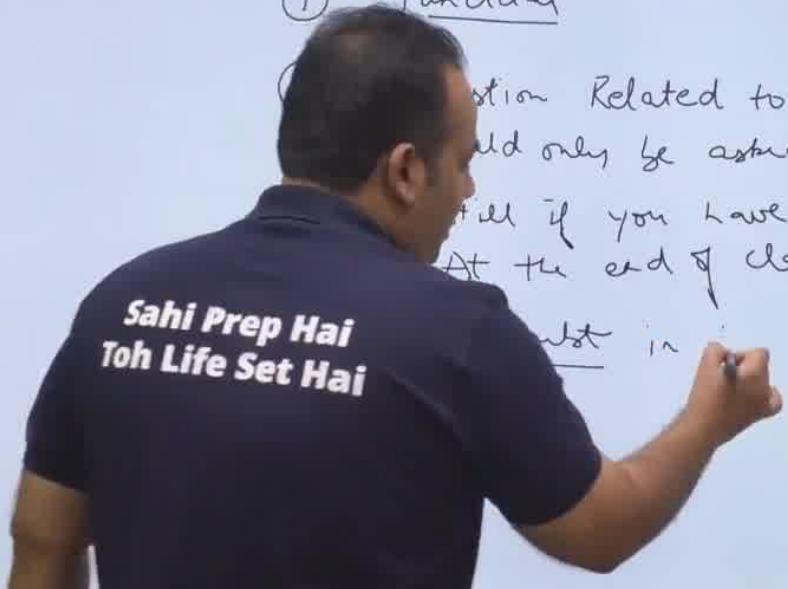
Expectations from this Batch

1. Punctual

2. stion Related to studies
ld only be asked during the class
ill if you have any question
At the end of class

3. st in



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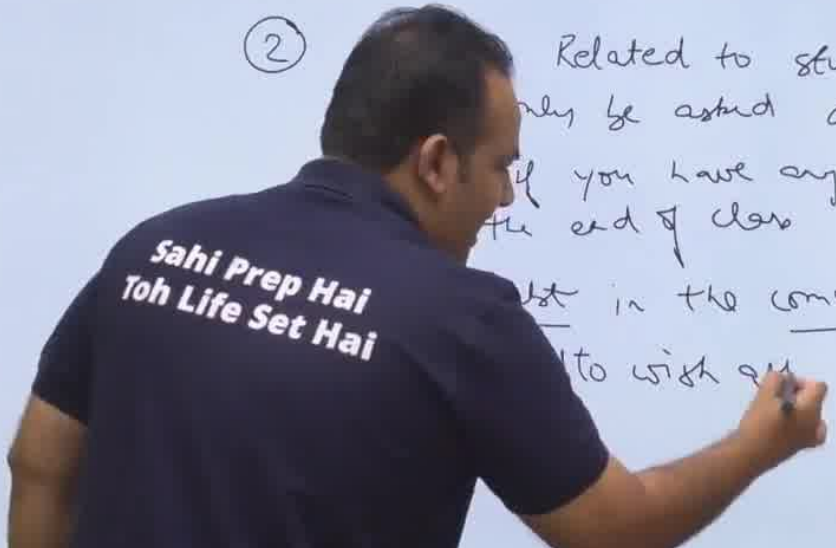
Expectations from this Batch

1. Punctual
2. Related to studies
   ...ly be asked during the class
   ...if you have any queries
   ...the end of class
   ...st in the comment
   ...to wish all



Expectations from this Batch

1. Punctual
2. Question Related to studies should only be asked during the class
   * Still if you have any question At the end of class
3. Doubt in the comment
4. No need to wish after 1 min
5.

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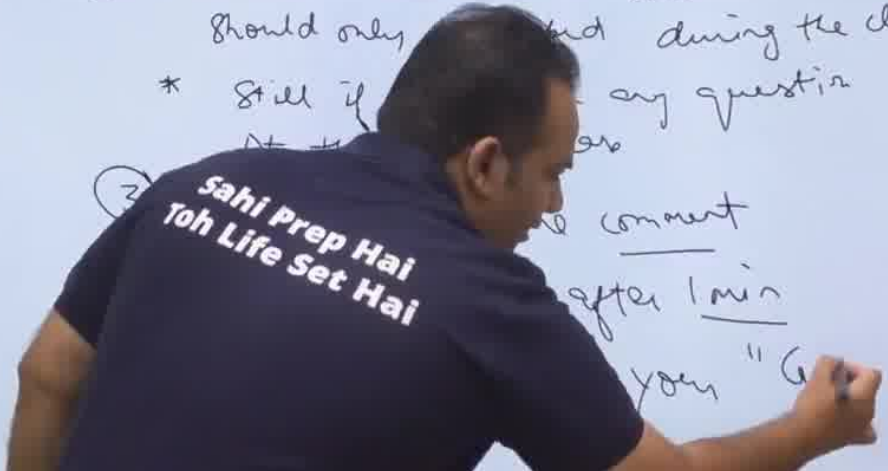
Expectations from this Batch

1. Punctual
2. Question Related to studies
   Should only [illegible] during the class
   * Still if [illegible] any question
   [illegible]
3. [illegible] comment
   [illegible] after 1 min
   [illegible] you "G[illegible]



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I st

Num

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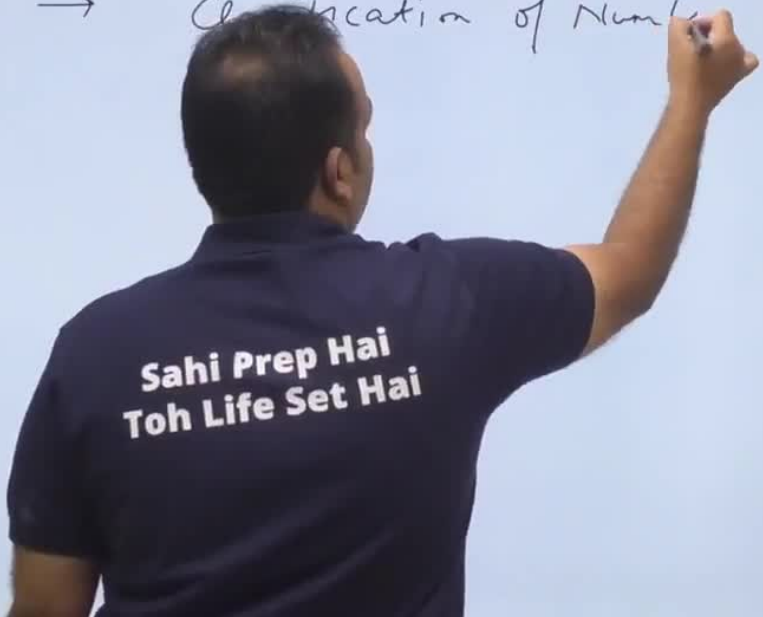
I st Number System

→ Classification of Numbers



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I st Number System

→ Classification of Numbers

→ lity Rules

→

→ (No. of Trailing

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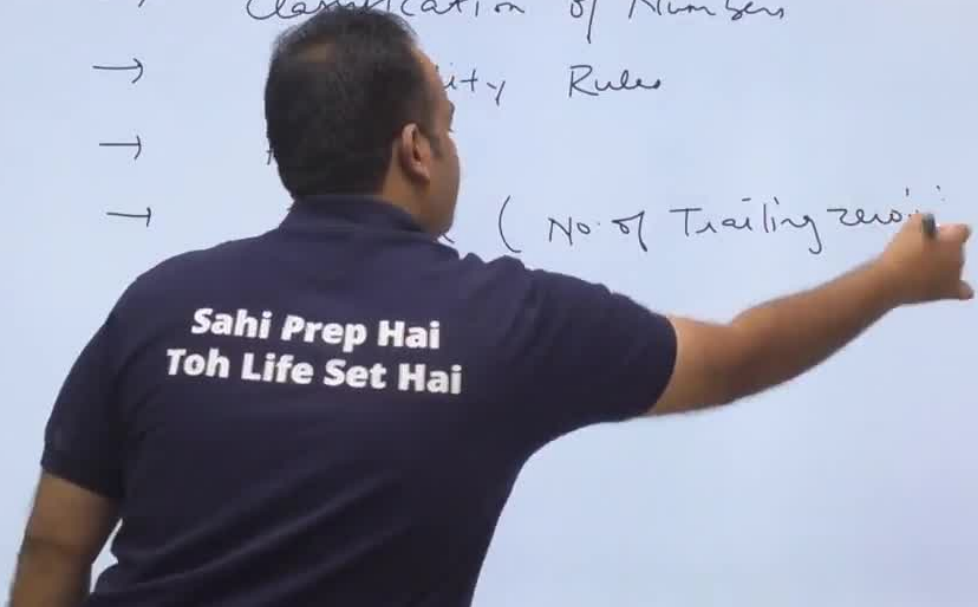
I st Number System

→ Classification of Numbers

→ ity Rules

→

→ (No. of Trailing zero



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I st Number System

→ Classification of Numbers

→ ivisibility Rules

→ tors

→ actorial (No of Trailing zeros)

→ Remainder

→ Unit digit

→ HCF & LCM

→ Misc

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I st Number System

→ Classification of Numbers

→ Divisibility Rules

→ F

→ (No. of Trailing zeros)

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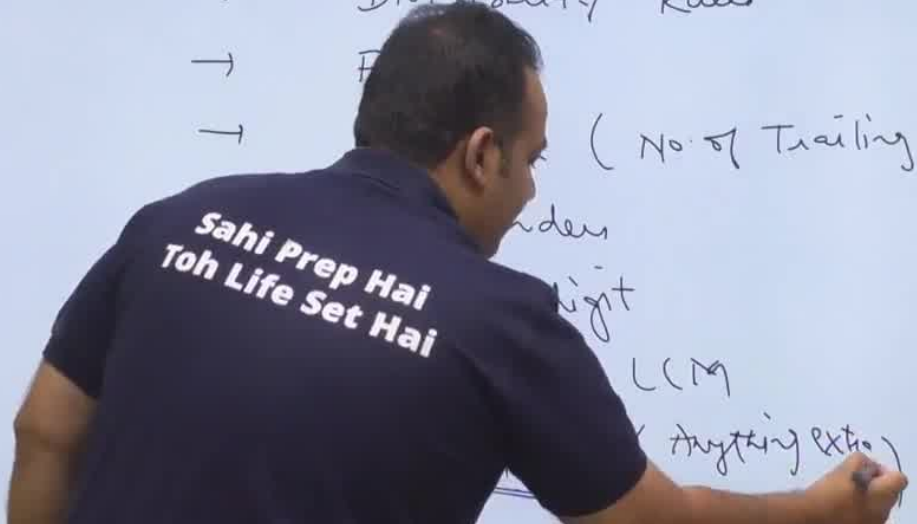
LCM

Anything extra)



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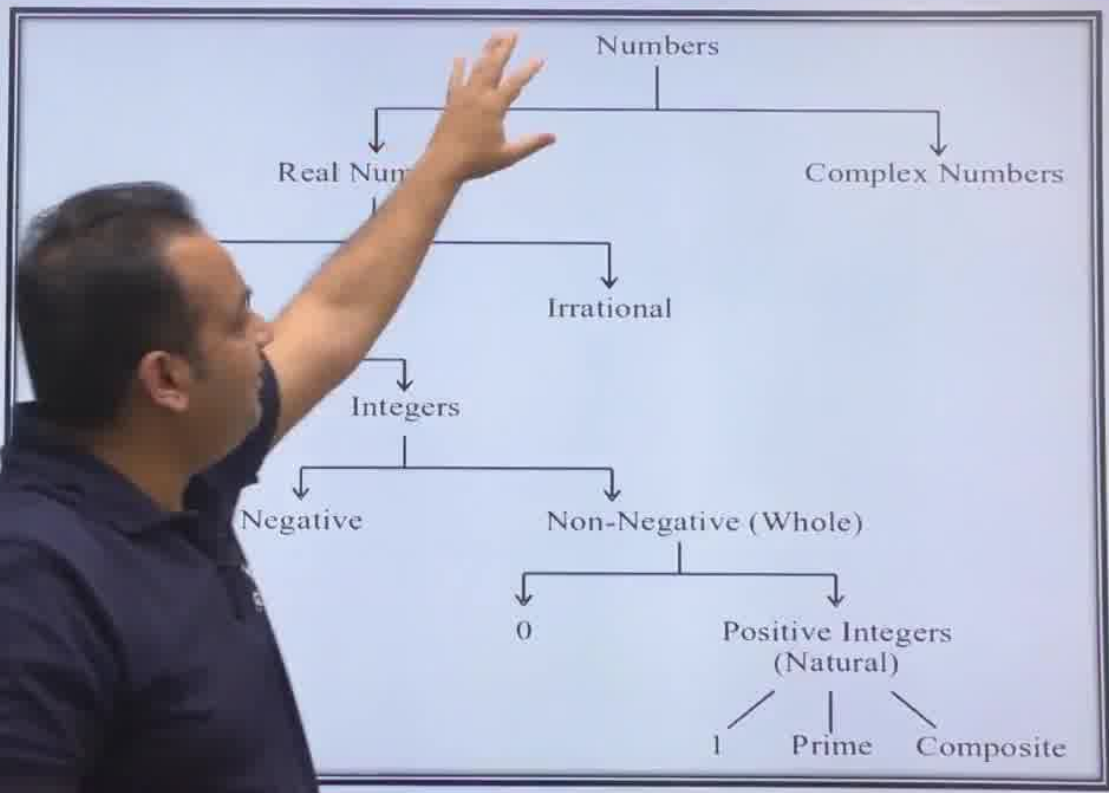
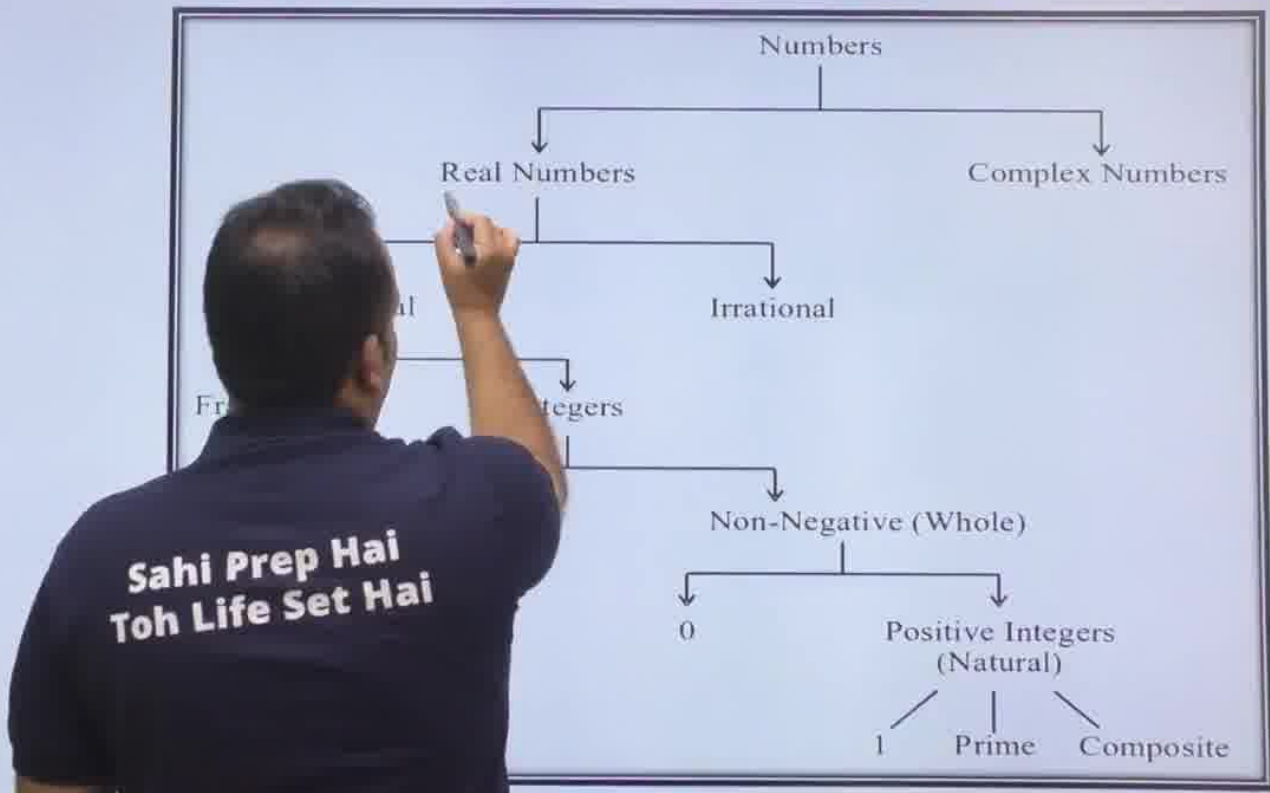
Agenda of the Session

Classification of Numbers

s session e are going to cover different
ty of n nbers and their properties.


Numbers
Real Num
Complex Numbers
Irrational
Integers
Negative
Non-Negative (Whole)
0
Positive Integers
(Natural)
1
Prime
Composite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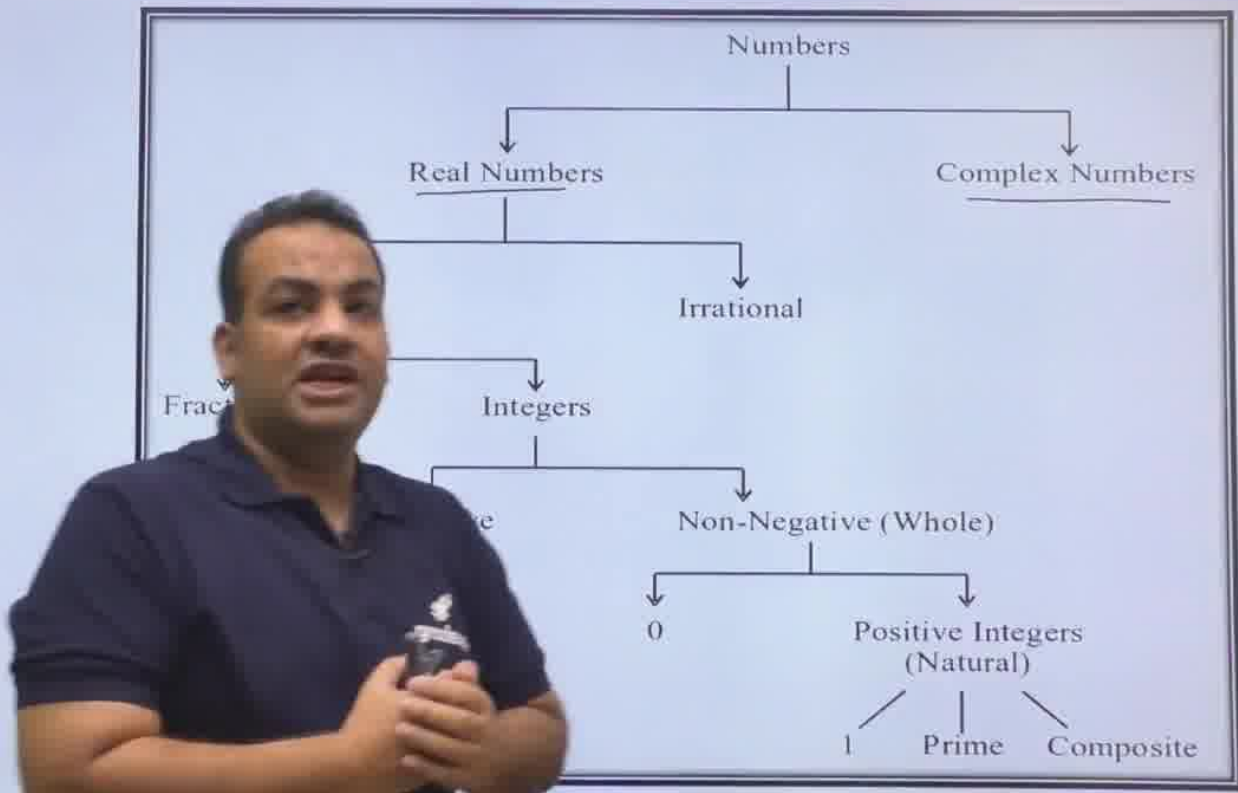
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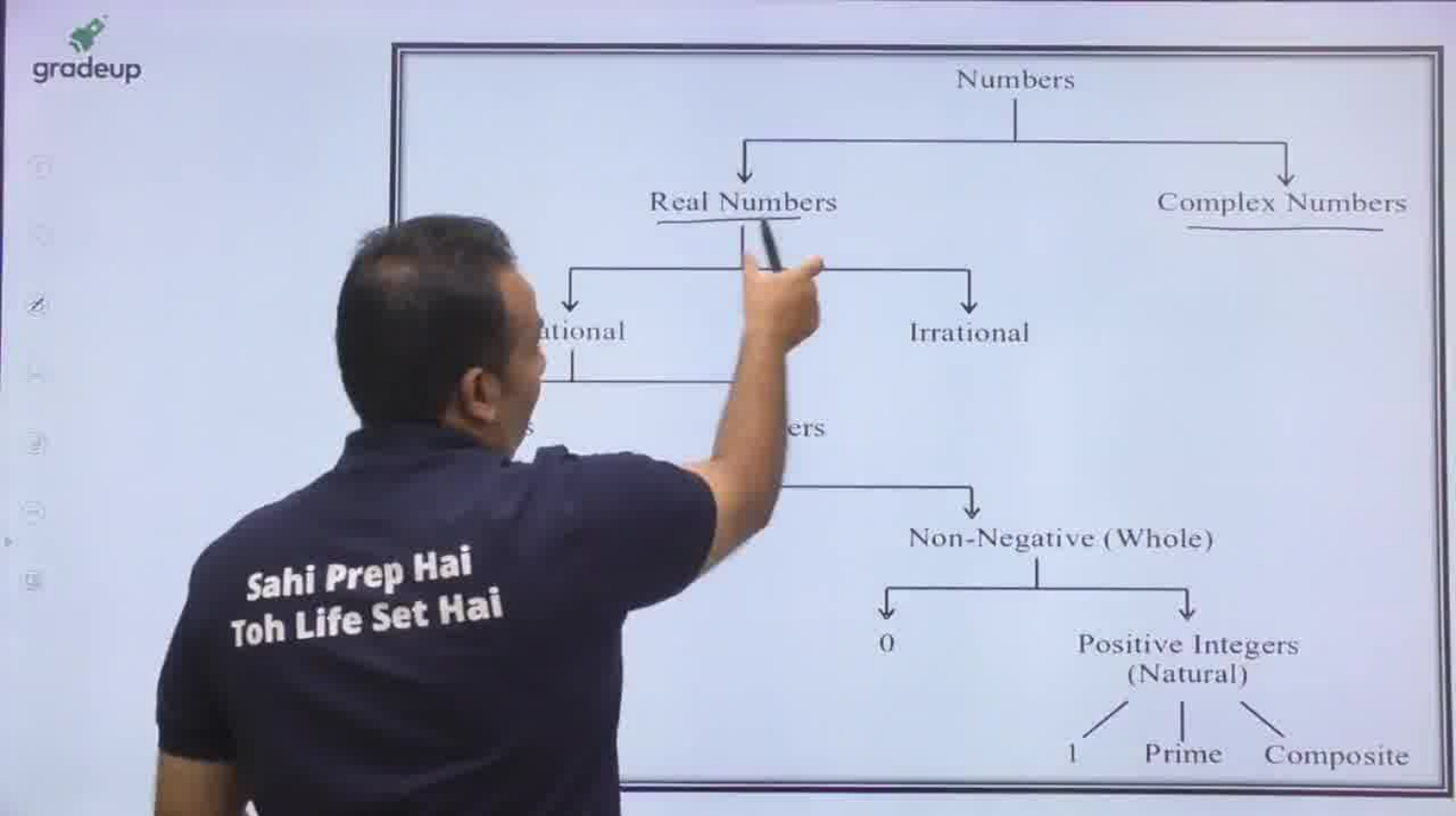
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Numbers
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Complex Numbers
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Non-Negative (Whole)
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Positive Integers
(Natural)
1
Prime
Composite
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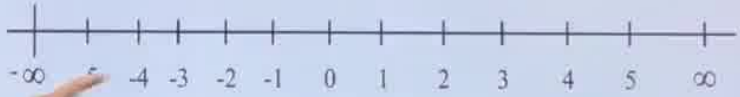
Real Numbers -

All those numbers which can be represented on number line are called as Real Numbers.



Eg. 0, 1, -1 [illegible], -22.87, $\sqrt{2}, \pi$ all are Real Numbers

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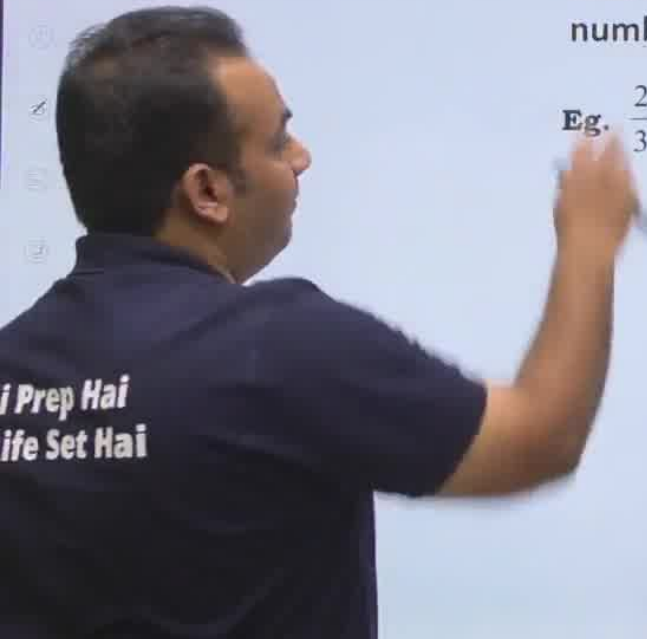
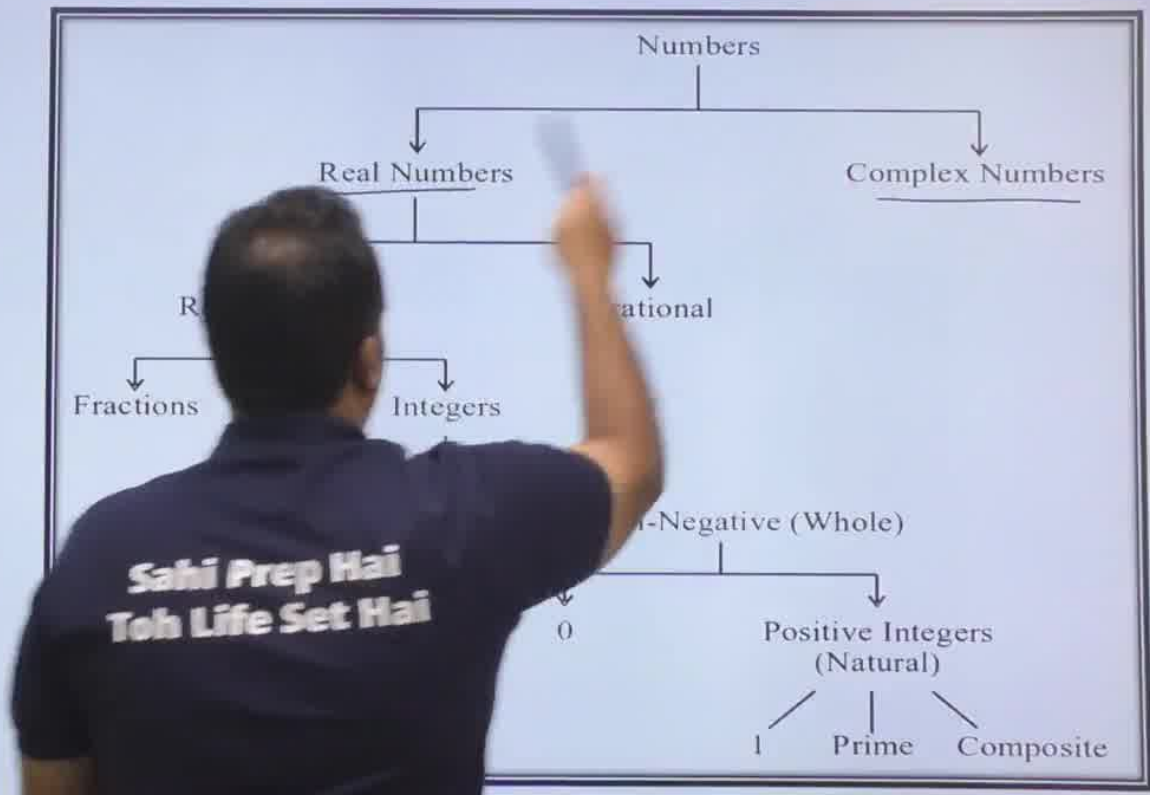
Rational Numbers–

All those numbers which can be expressed in p/q form, where p & q both are integers & $q \neq 0$ are rational numbers.

Eg. $\frac{2}{3}, \frac{4}{7}, \frac{-8}{7}, \frac{0}{5}, 2 \& 0.2$ all are Rational Numbers.




Numbers
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Complex Numbers
R
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Fractions
Integers
-Negative (Whole)
0
Positive Integers
(Natural)
1
Prime
Composite
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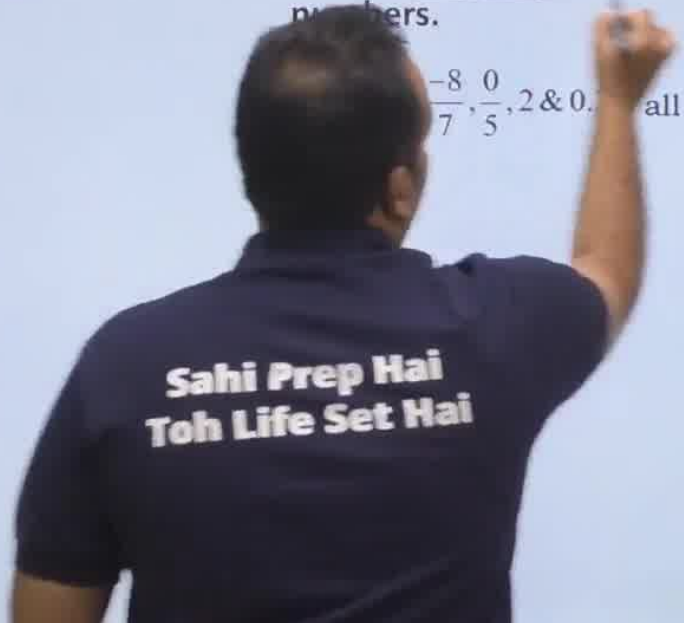
Rational Numbers–

All those numbers which can be expressed in p/q form, where p & q both are integers & q ≠ 0 are rational numbers.

$\frac{-8}{7}, \frac{0}{5}, 2 \& 0.$ all are Rational Numbers.



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Rational Numbers–

All those numbers which can be expressed in p/q form, where p & q both are integers & q ≠ 0 are rational numbers.

Integers

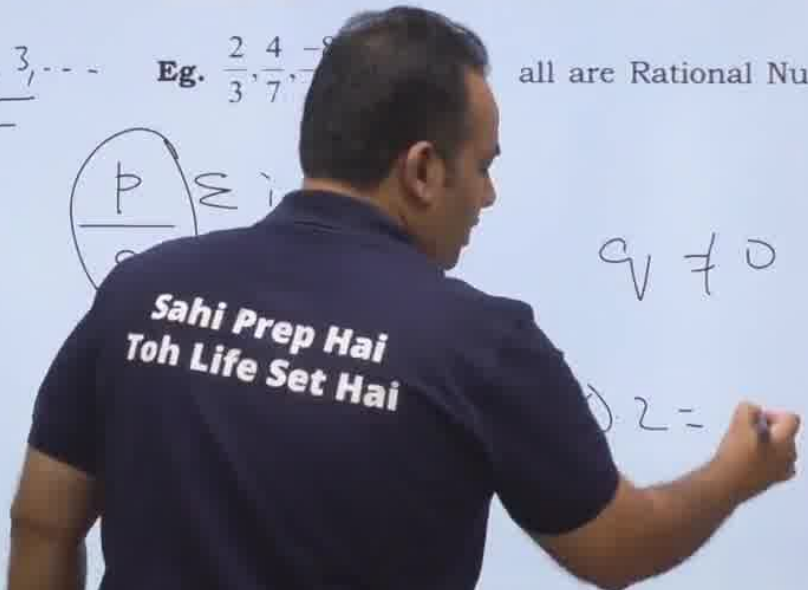
$-3, -2, -1, 0, 1, 2, 3, \ldots$

Eg. $\frac{2}{3}, \frac{4}{7}, \frac{-8}{\ldots}$ all are Rational Numbers.

$\frac{p}{q} \in$

$q \neq 0$

$0 \cdot 2 =$



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Integers

Rational Numbers–

All those numbers which can be expressed in p/q form, where p & q both are integers & q ≠ 0 are rational numbers.

$-3, -2, -1, 0, 1, 2, 3, \ldots$

Eg. $\frac{2}{3}, \frac{4}{7}, \frac{-8}{7}, \frac{0}{5}, .2 \& 0.2$ all are Rational Numbers.

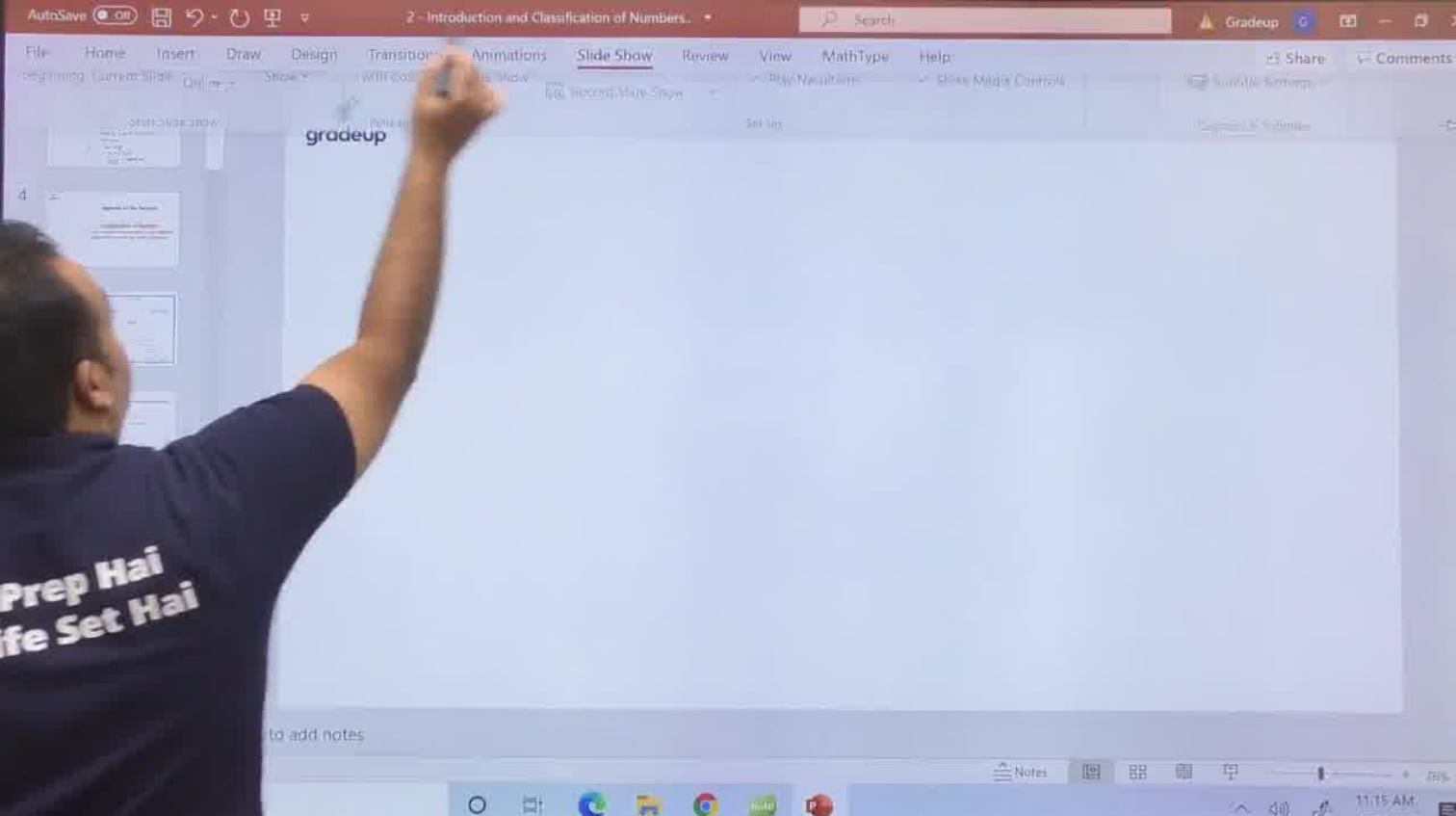
p ∈ integer

q ∈ integer

$q \neq 0$

$2 = \frac{2}{1}$

$0.2 = \frac{1}{5}$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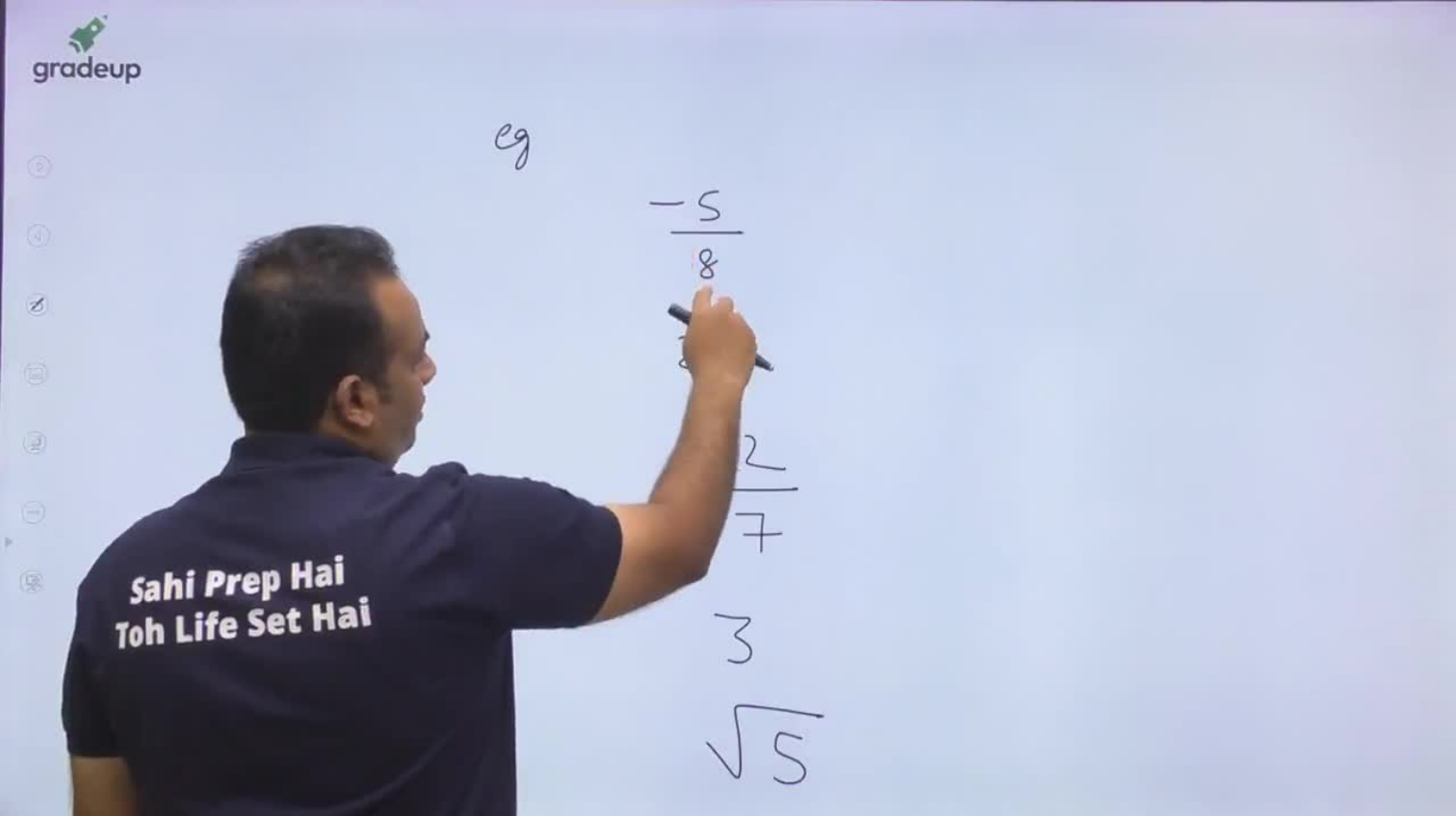
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3
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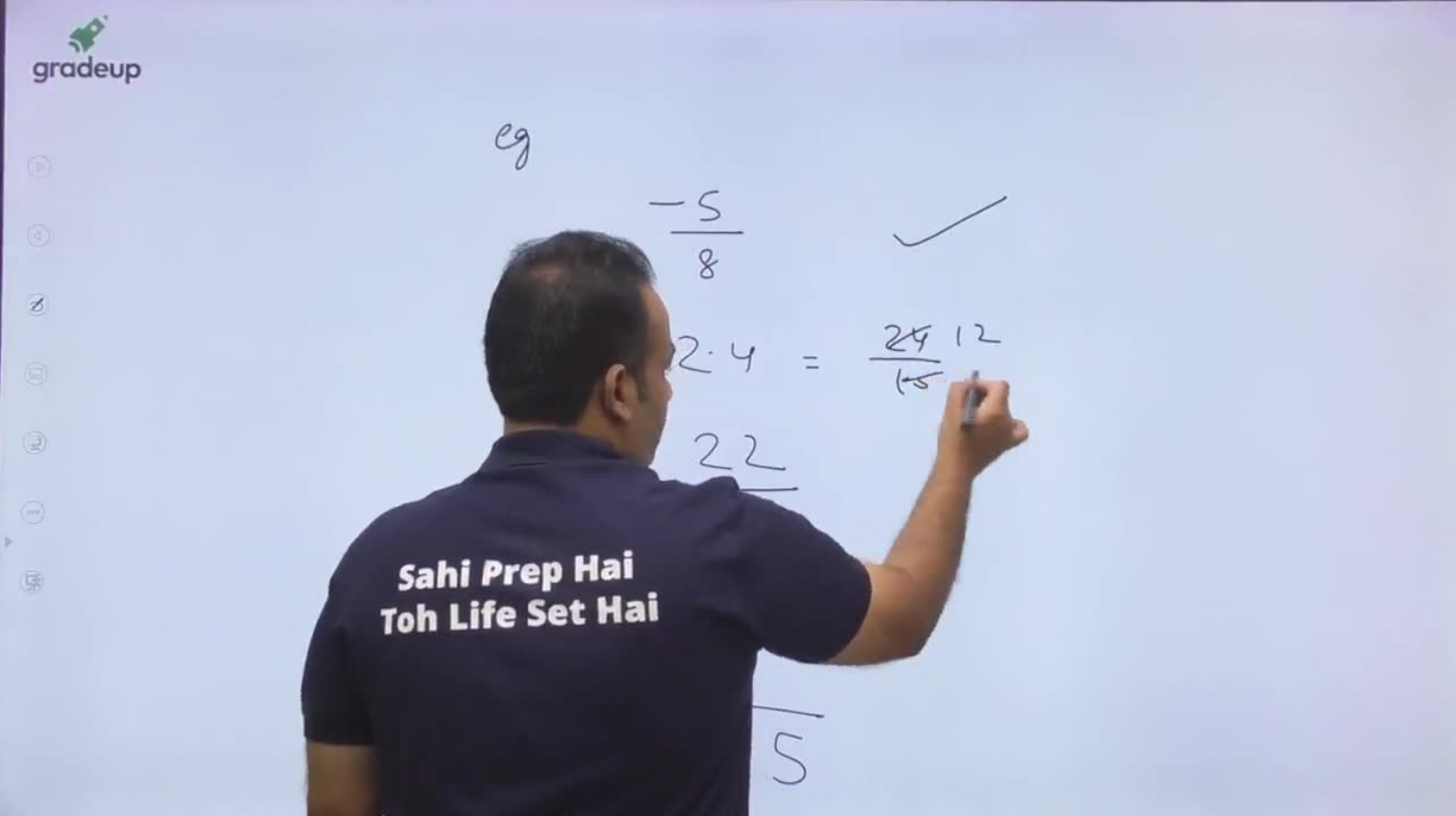
Toh Life Set Hai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eg
$\frac{-5}{8}$
✓
2.4 = $\frac{24}{15}$ 12
22
Sahi Prep Hai
Toh Life Set Hai
5

gradeup

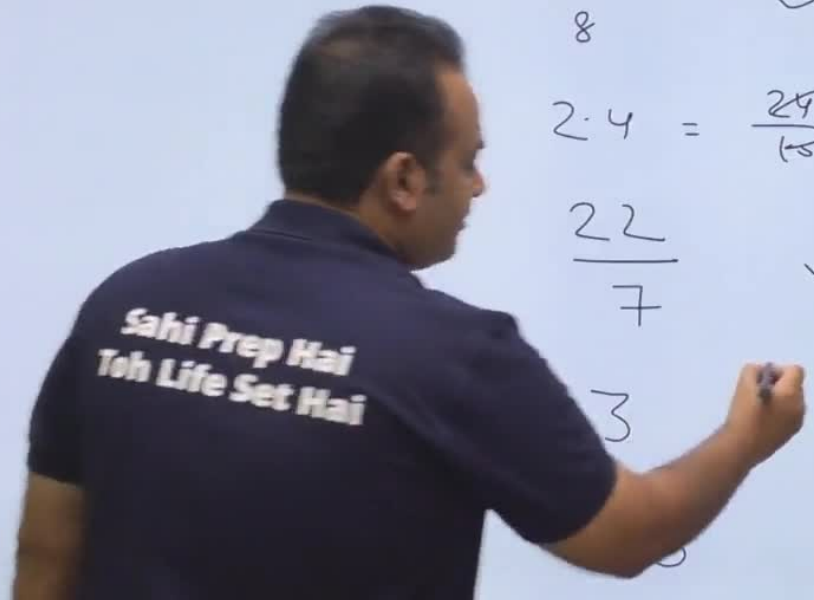
eg

$\frac{-5}{8}$ ✓

$2.4 = \frac{24}{10} = \frac{12}{5}$ ✓

$\frac{22}{7}$ ✓

3



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Rational Numbers–

All those numbers which can be expressed in p/q form, where p & q both are integers & q ≠ 0 are rational numbers.

Integers

$-3, -2, -1, 0, 1, 2, 3, \ldots$

$\frac{4}{7}, \frac{-8}{7}, \frac{0}{5}, 2 \& 0.2$ all are Rational Numbers.

integer

integer $q \neq 0$

$2 = \frac{2}{1}$ $0.2 = \frac{1}{5}$

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Rational Numbers–

All those numbers which can be expressed in p/q form, where p & q both are integers & q ≠ 0 are rational numbers.

Integers

-3, -2, -1, 0, 1, 2, 3, ...

Eg. & 0.2 all are Rational Numbers.

p

q ≠ 0

1/5

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Irrational Numbers–

Th[illegible] numbers which can't be expressed in p/q form are ca[illegible]as Irrational Numbers.

Eg $\sqrt{2}, \sqrt{3}, \sqrt{5}$ & π are called as Irrational Numbers.

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$$\frac{22}{7} =$$

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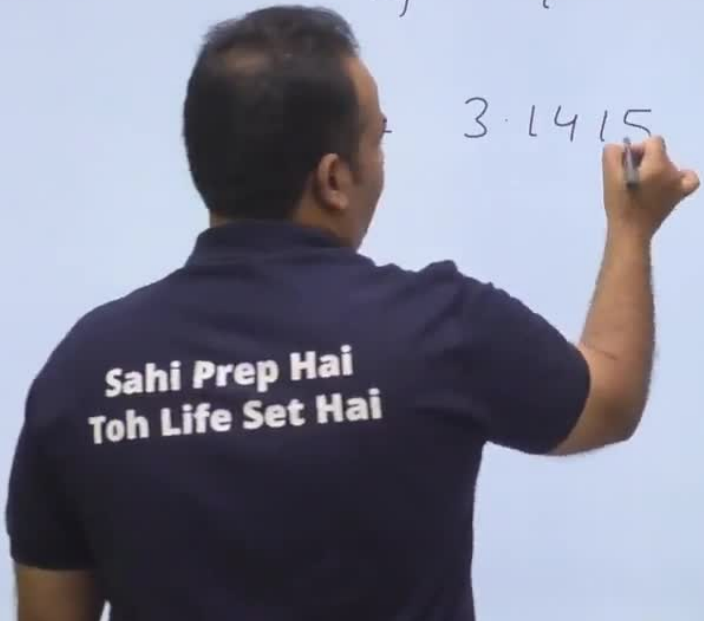
$$\frac{22}{7} \neq \pi$$

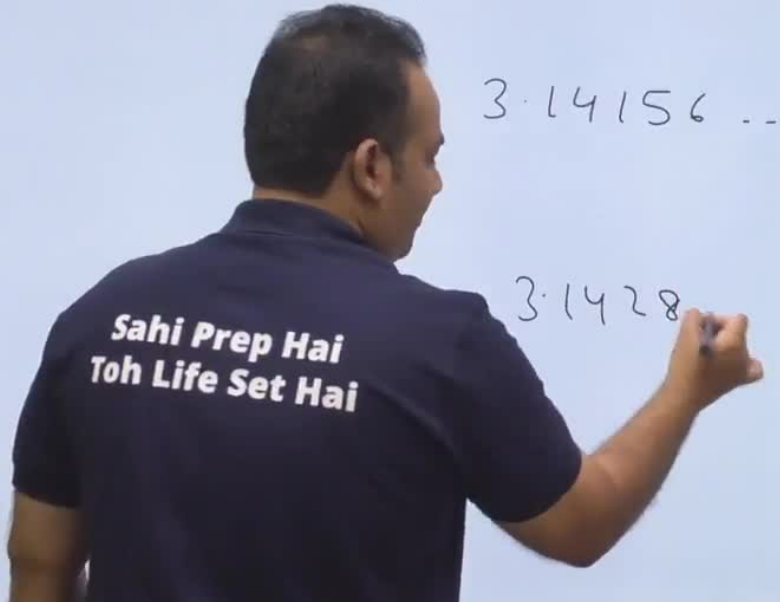
$\pi = 3.1415$



$$\frac{22}{7} \neq \pi$$

3.14156 .....

3.1428

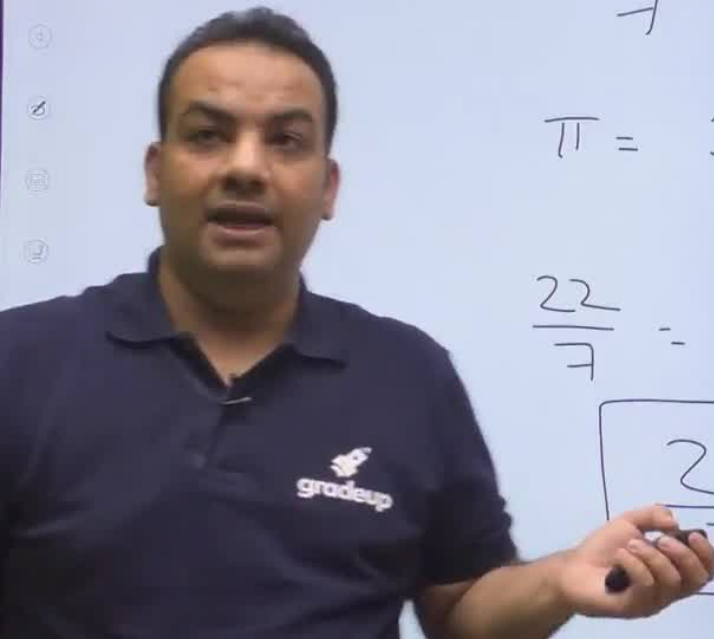


$$\frac{22}{7} \neq \pi$$

$\pi = 3.14156\ldots\ldots\ldots$

$\frac{22}{7} = 3.142857142857\ldots$

$\frac{22}{7} > \pi$



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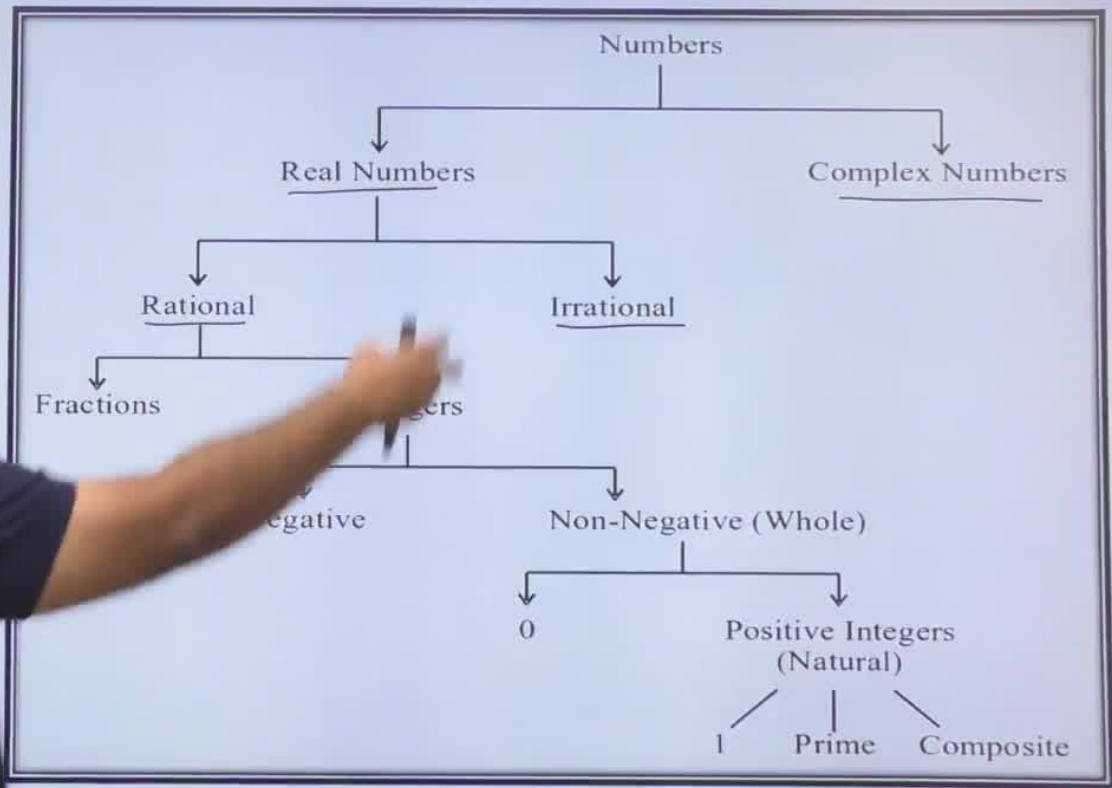
Integers–

Integers are a collection of all positive & negative natural numbers & zero.

i.e. ,.....-5, -4, ...-1, 0, 1, 2, 3, ...∞


Numbers
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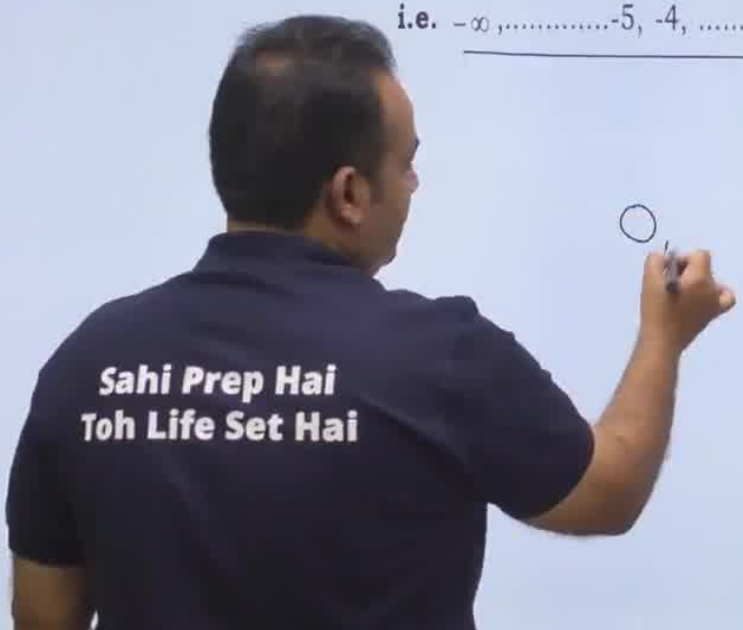
Integers–

Integers are a collection of all positive & negative natural numbers & zero.

i.e. $-\infty$,.....-5, -4, ...-1, 0, 1, 2, 3, ... ∞



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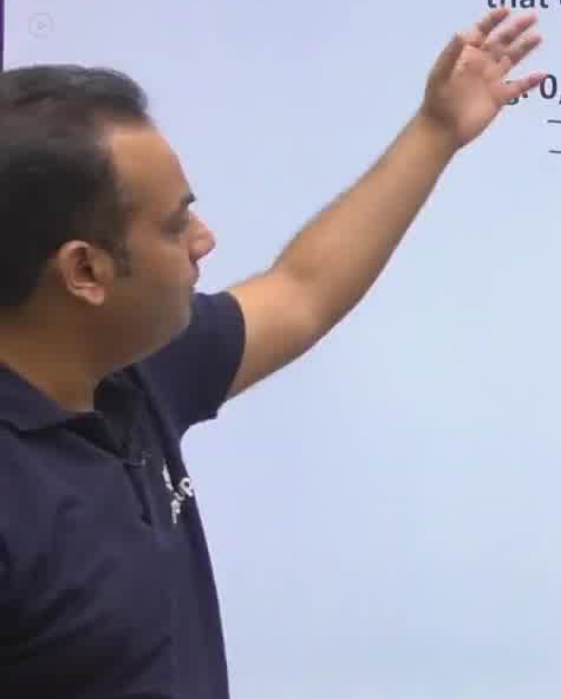
Whole Numbers (Non-Negative Integers)

If we add zero (0) to the collection of Natural Numbers then that collection is called as Whole Numbers.

∴ 0, 1, 2, ...



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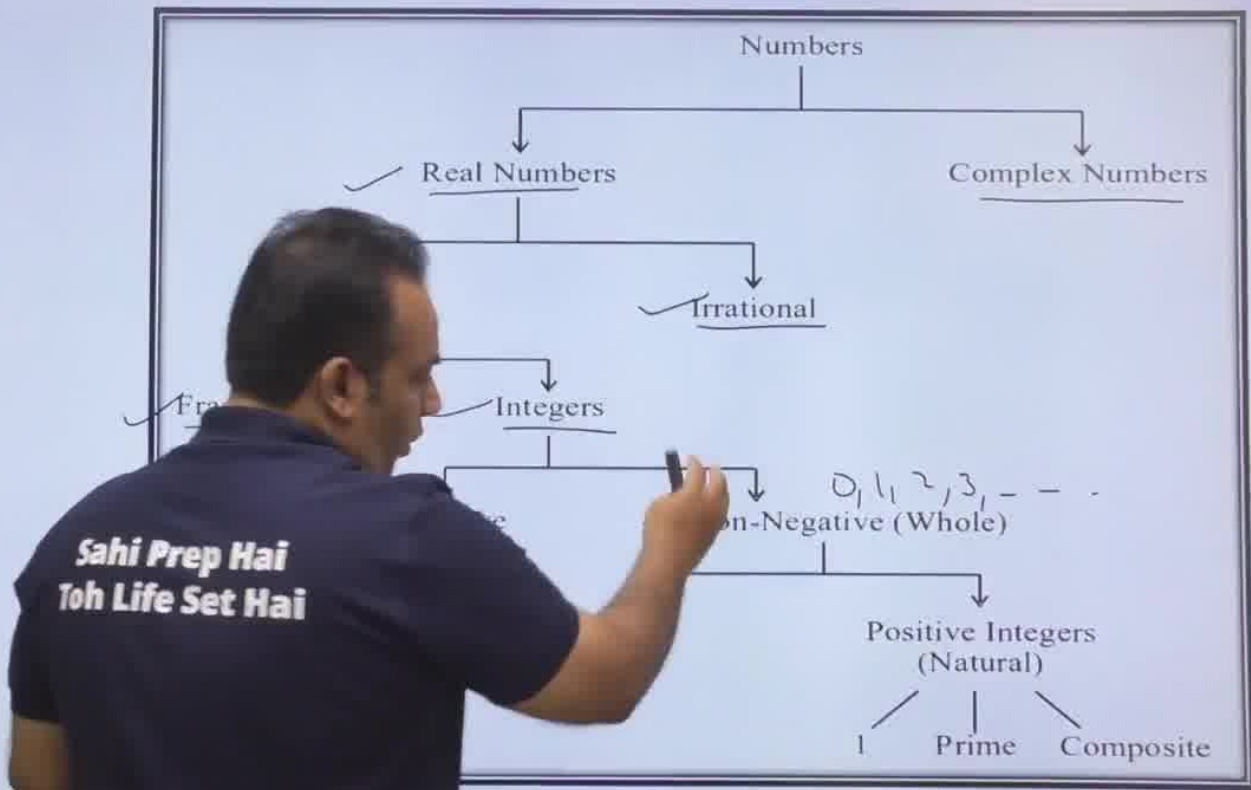
Natural Numbers (Positive Integers)

Counting Numbers are called as natural numbers.

Eg. 1, 2, 3, ...


Numbers
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Complex Numbers
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Integers
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Positive Integers
(Natural)
1
Prime
Composite
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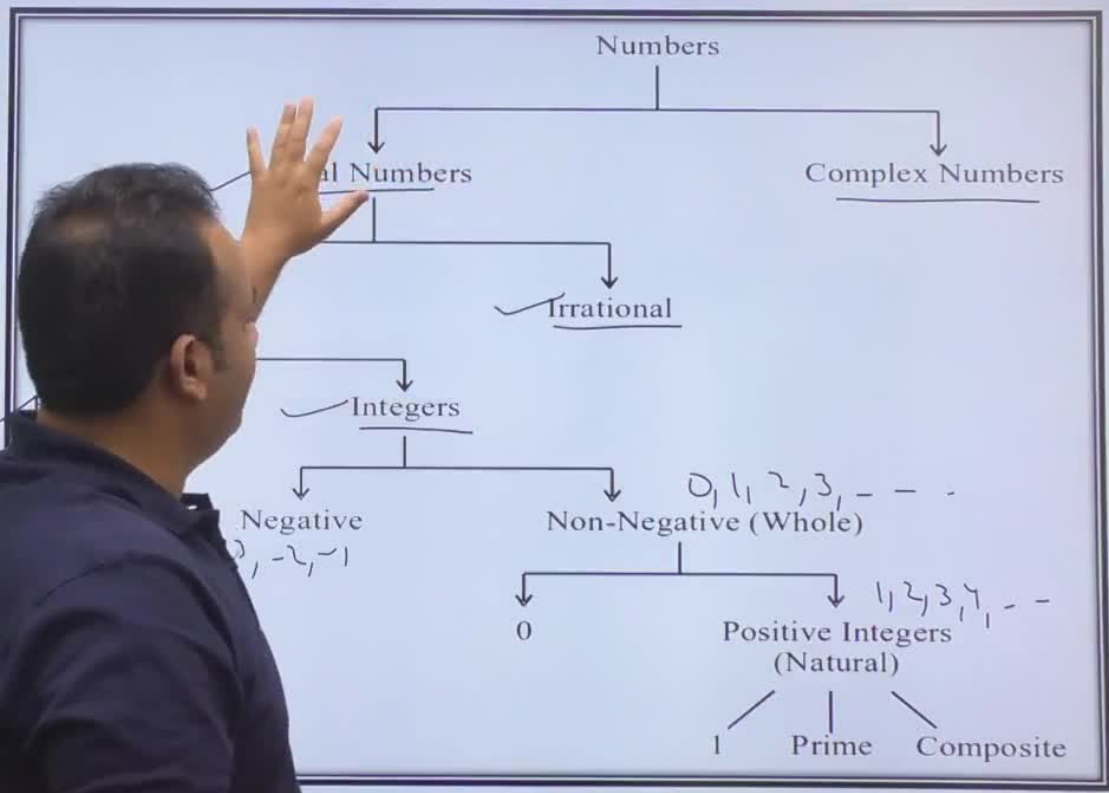
Any Doubt


Numbers
l Numbers
Complex Numbers
Irrational
Integers
Negative
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Prime
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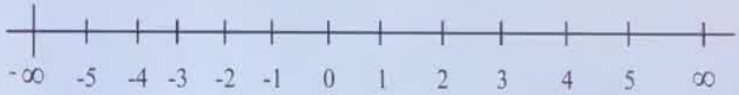
Real Numbers -

All those numbers which can be represented on number line are called as Real Numbers.



Eg. 0, 1, -1, 16.83, -22.87, $\sqrt{2}, \pi$ all are Real Numbers

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Rational Numbers–

All those numbers which can be expressed in p/q form, where p & q both are integers & q ≠ 0 are rational numbers.

teger

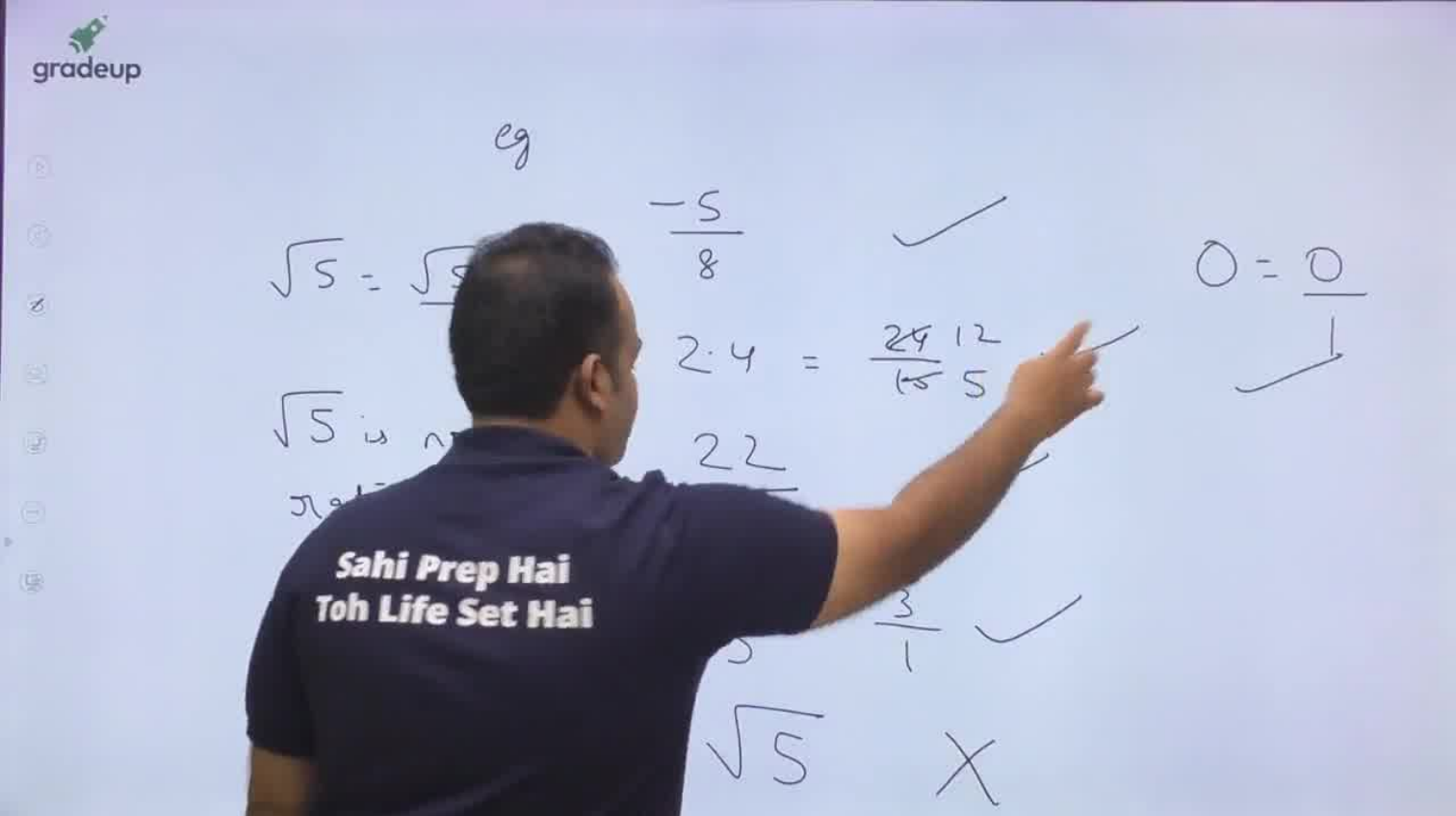
, 0, 1, 2, 3, - - -

Eg. $\frac{2}{3}, \frac{4}{7}, \frac{-8}{7}, \frac{0}{5}, 2 \& 0.2$ all are Rational Numbers.

$\frac{p}{q}$ ∈ integer

∈ integer $q \neq 0$

$2 = \frac{2}{1}$ $0.2 = \frac{1}{5}$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eg
$\frac{-5}{8}$
$\sqrt{5} = \sqrt{5}$
$2:4 = \frac{24}{10}\ \frac{12}{5}$
$0 = \frac{0}{1}$
$\sqrt{5}$ is
22
Sahi Prep Hai
Toh Life Set Hai
$\frac{3}{1}$
$\sqrt{5}$
X

gradeup

eg

$\frac{-5}{8}$ ✓

$\sqrt{5} = \sqrt{5}$

$2.4 = \frac{24}{10} = \frac{12}{5}$ ✓

$0 = \frac{0}{1}$ ✓

$\sqrt{5}$ is n...

rati...

$\frac{22}{7}$ ✓

3 $\frac{3}{1}$ ✓

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Irrational Numbers–

Those numbers which can't be expressed in p/q form are called as Irrational Numbers.

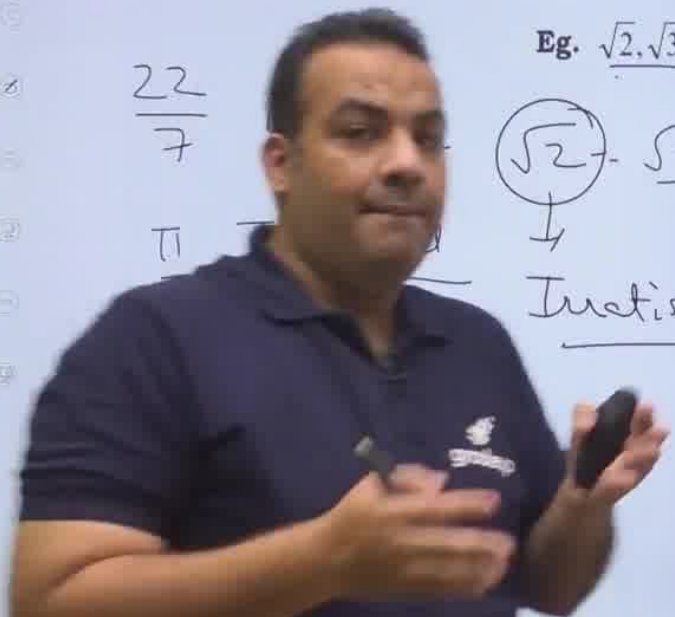
Eg. $\sqrt{2}, \sqrt{3}, \sqrt{5}$ & π are called as Irrational Numbers.

$\pi \rightarrow$ Irrational

$\frac{22}{7}$

$\sqrt{2} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{2}{\sqrt{2}}$

Irrational



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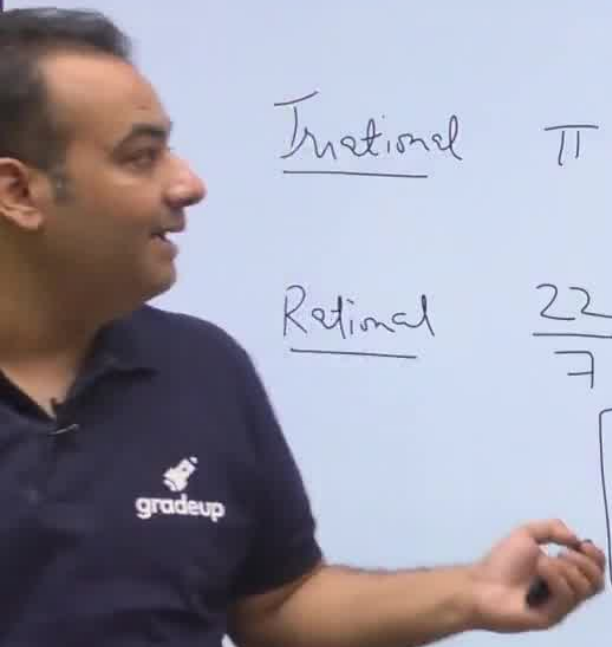
$$\frac{22}{7} \neq \pi$$

Irrational $\pi = 3.14156\ldots\ldots\ldots$

Rational $\frac{22}{7} = 3.142857142857\ldots\ldots$

$$\frac{22}{7} > \pi$$



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Integers–

Integers are a collection of all positive & negative natural numbers & zero.

i.e. $-\infty$, ...-5, -4, ...-1, 0, 1, 2, 3, ... ∞

$\ldots -4, -3, -2, -1, 0, 1, 2, 3, 4, \ldots$

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Whole Numbers (Non-Negative Integers)

If we add zero (0) to the collection of Natural Numbers then that collection is called as Whole Numbers.

Eg. 0, 1, 2, ...

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Any Doubt

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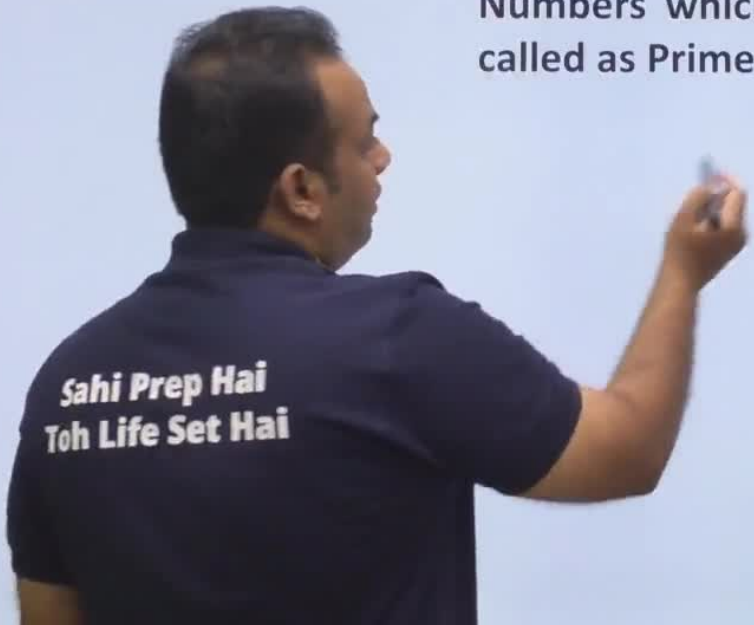
PRIME NUMBERS

Def:

Numbers which have exactly 2 factors are called as Prime Numbers.



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PRIME NUMBERS

f:

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PRIME NUMBERS

Def:

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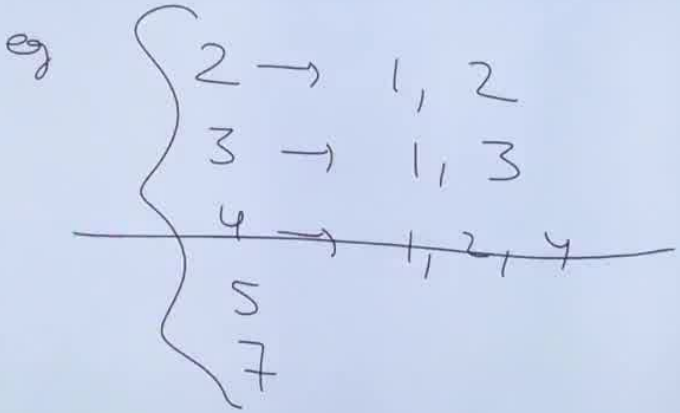

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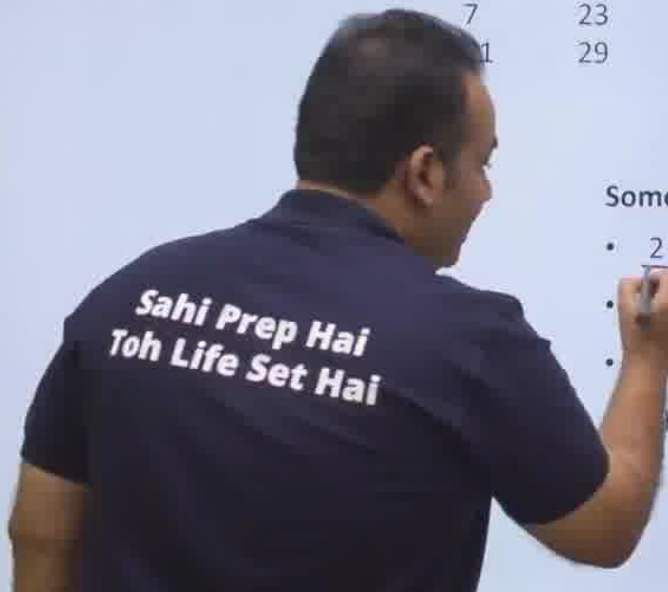
Eg. 2, 3, 5, 7, 11, 13.....

Set of all Prime Numbers less than 100

2	13	31	53	73
3	17	37	59	79
5	19	41	61	83
7	23	43	67	89
1	29	47	71	97



Some Important points regarding prime number

- 2 is the smallest and only even prime number
- e are 15 prime numbers from 1 to 50
- here are 25 prime numbers from 1 to 100
- here are 46 prime numbers from 1 to 200

gradeup

Eg. 2, 3, 5, 7, 11, 13.....

Set of all Prime Numbers less than 100

2	13	31	53	73
3	17	37	59	79
5	19	41	61	83
7	23	43	67	89
1		47	71	97

2 → smallest

only e

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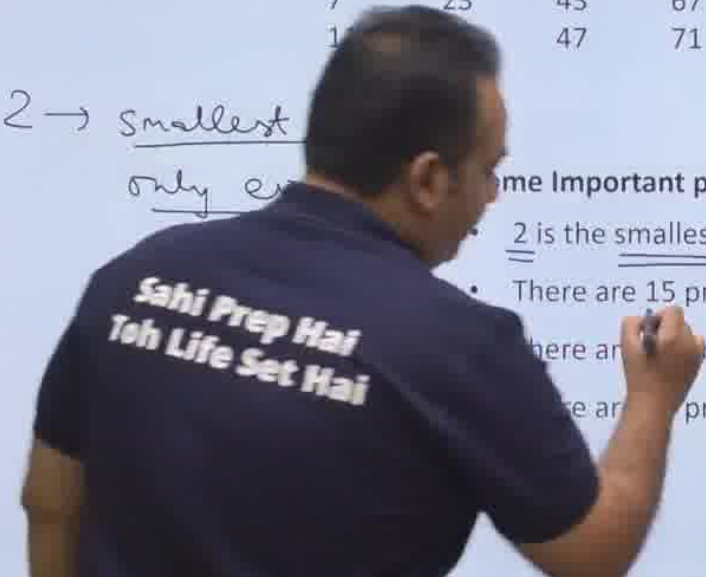

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How many prim

are there b/

10

Important points regarding prime number

is the smallest and only even prime number

There are 15 prime numbers from 1 to 50

are 25 prime numbers from 1 to 100

re 46 prime numbers from 1 to 200

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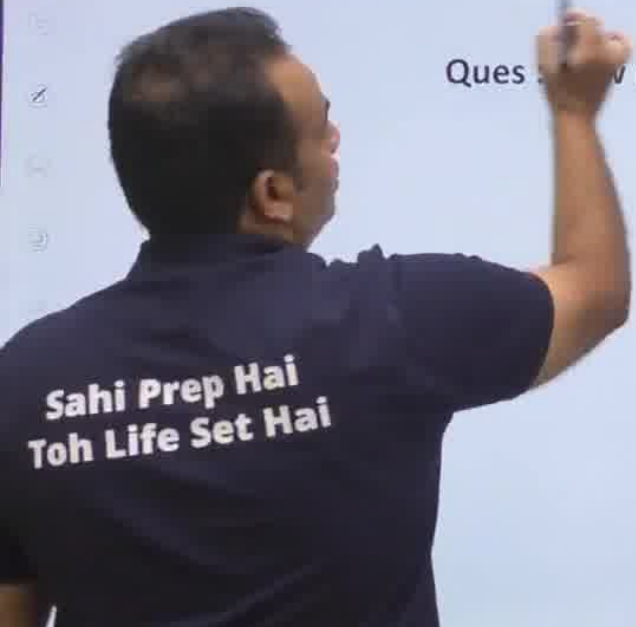
Composite Numbers :

Numbers which have more than two factors .

e.g. 4,6,8,9,10,.....

Ques : ...w many composite numbers are there from 1 to 100.



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Composite Numbers :

Numbers which have more than two factors .

e.g. 4,6,8,9,10,.....

4 → 1, 2, 4

6 → 1, 2, 3, 6

8 → 1, 2, 4, 8

O many composite numbers are there from 1 to 100.

100

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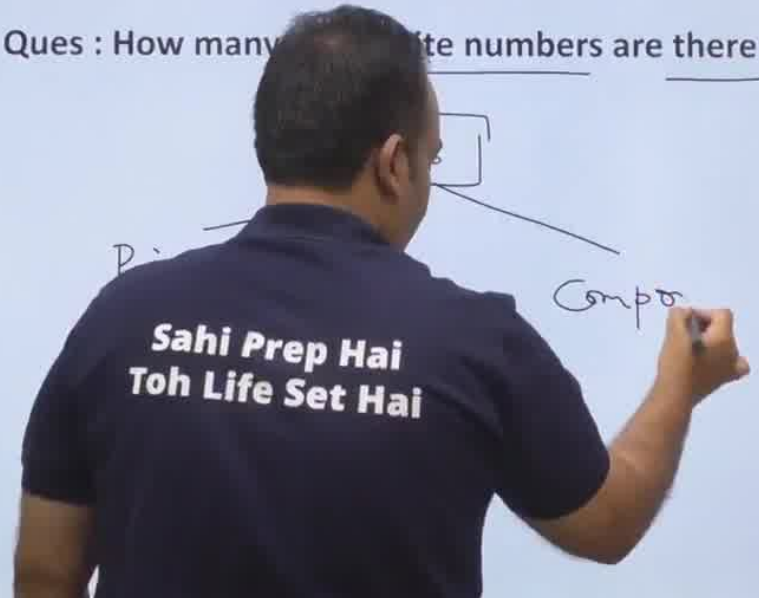

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Composite Numbers :

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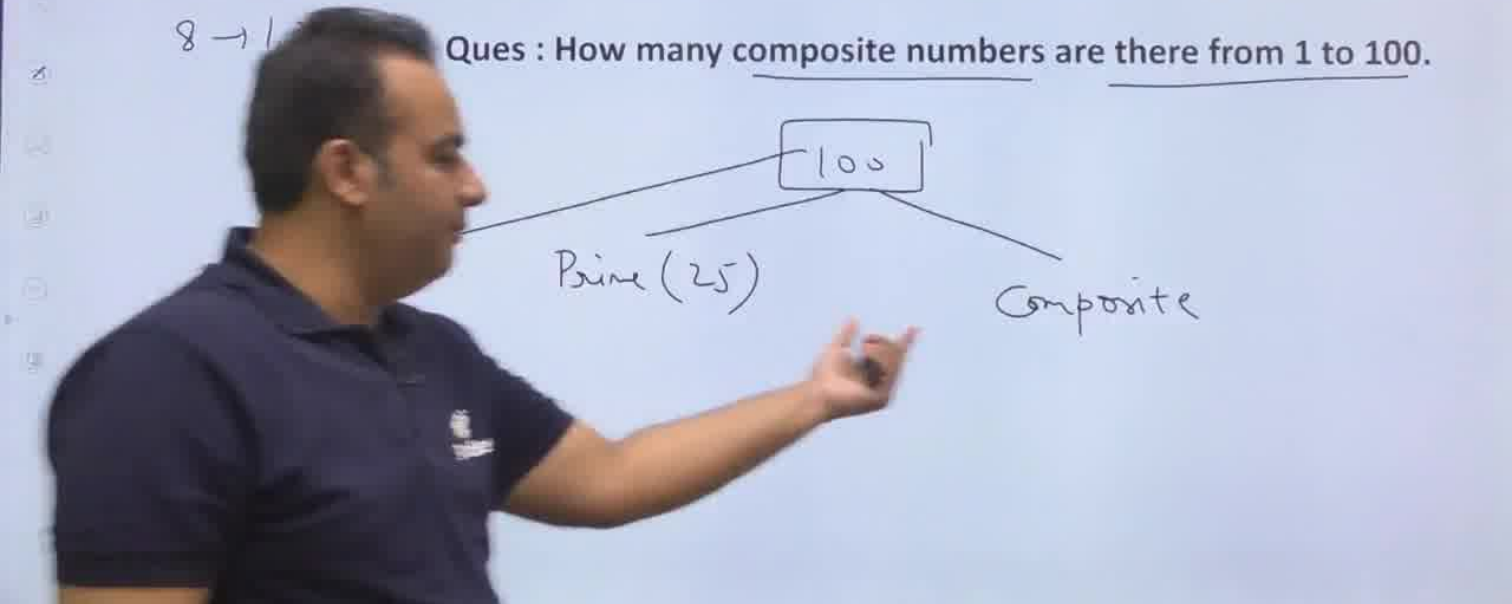
e.g. 4,6,8,9,10,.....

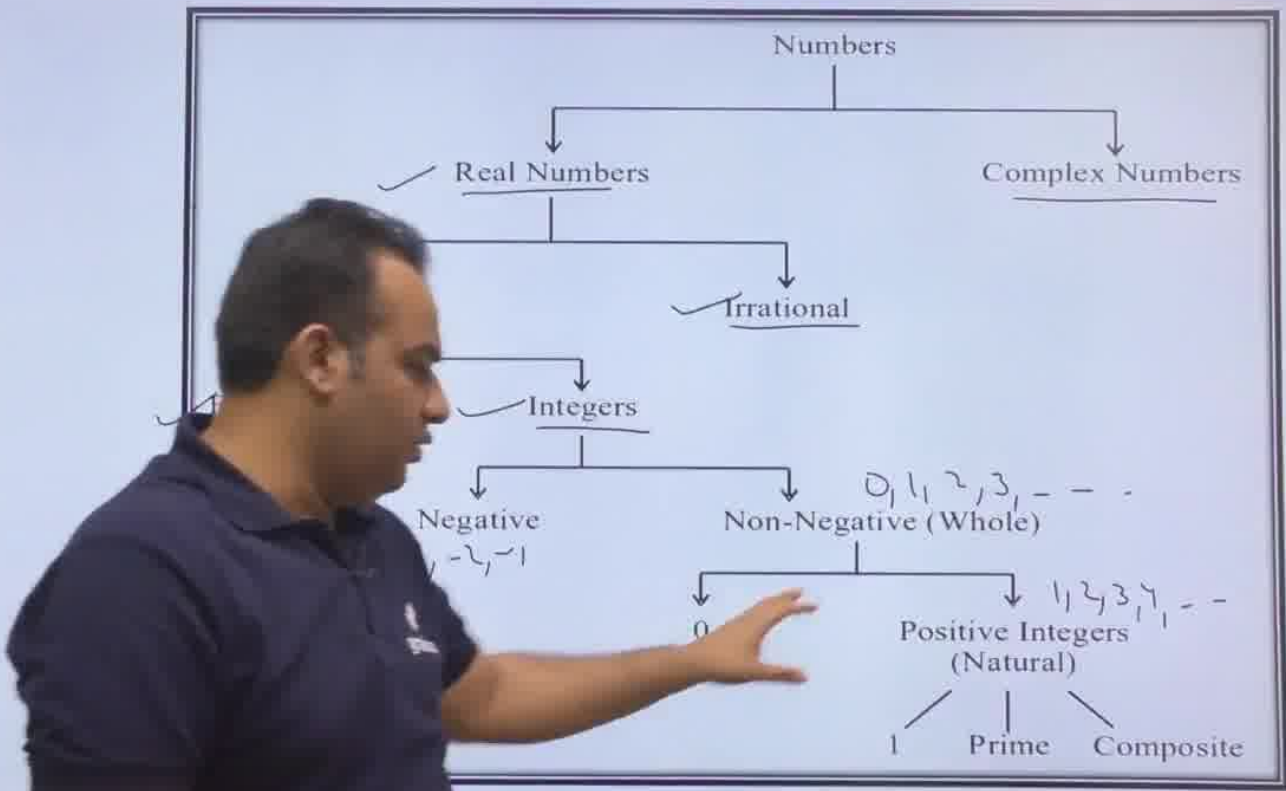
4 → 1, 2, 4

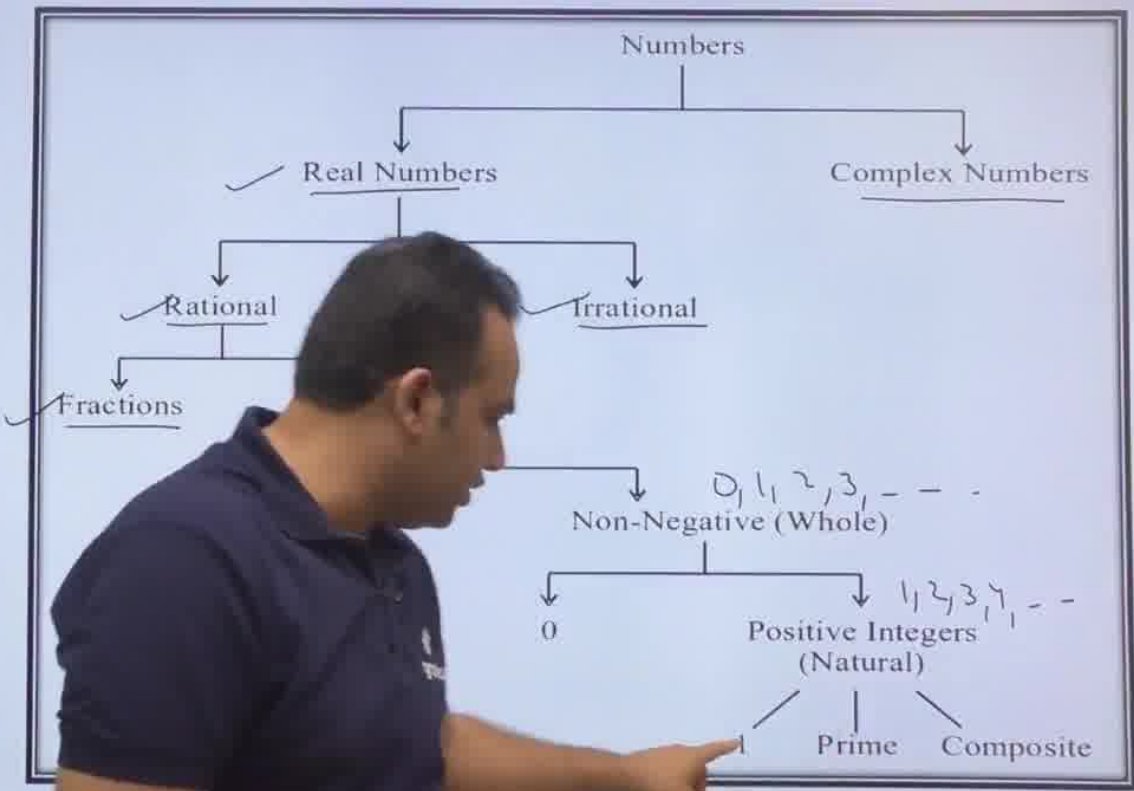
6 → 1, 2, 3, 6

8 → 1

Ques : How many composite numbers are there from 1 to 100.




Numbers
Real Numbers
Complex Numbers
Irrational
Integers
Negative
Non-Negative (Whole)
0
Positive Integers
(Natural)
1
Prime
Composite


Numbers
Real Numbers
Complex Numbers
Rational
Irrational
Fractions
0, 1, 2, 3, - - -
Non-Negative (Whole)
0
1, 2, 3, 4, - -
Positive Integers
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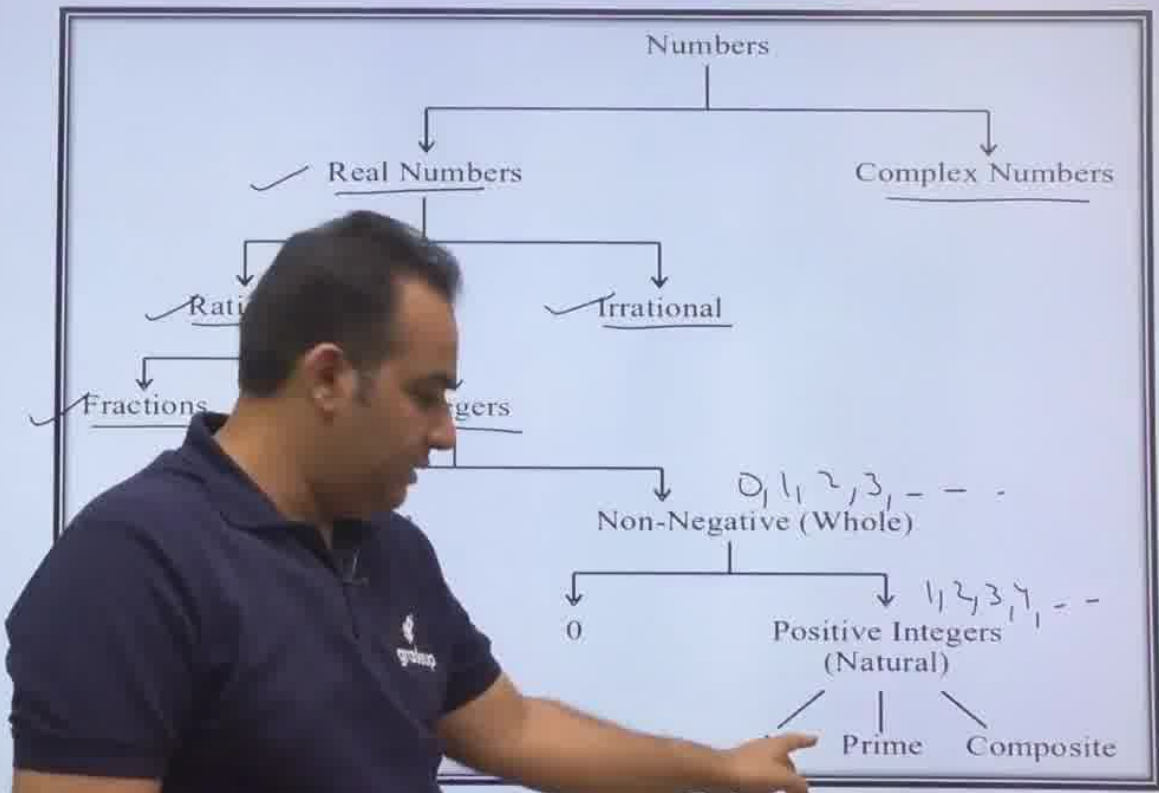
Numbers
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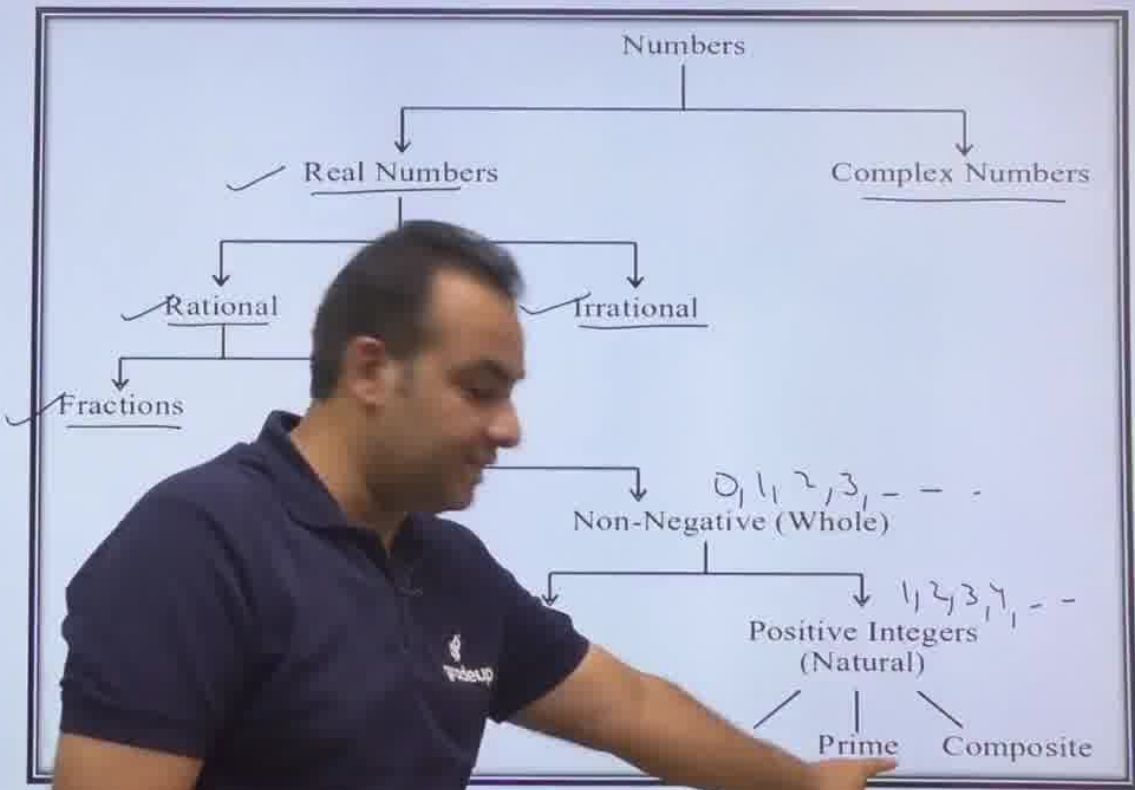
Numbers
Real Numbers
Complex Numbers
Rational
Irrational
Fractions
0, 1, 2, 3, - - -
Non-Negative (Whole)
1, 2, 3, 4, - -
Positive Integers
(Natural)
Prime
Composite

gradeup

Important property of **Prime number**

All prime no's (>3) are of the form **6k ± 1**

e.g. $37 = 6.6 + 1$

$53 = 6.9 - 1$

$73 = 6.12 + 1$

$29 = 6.5 - 1$

B of the form $6k \pm 1$ **may or may not be prime.**

e.g. $25 = 6.4 + 1$ is **not prime**

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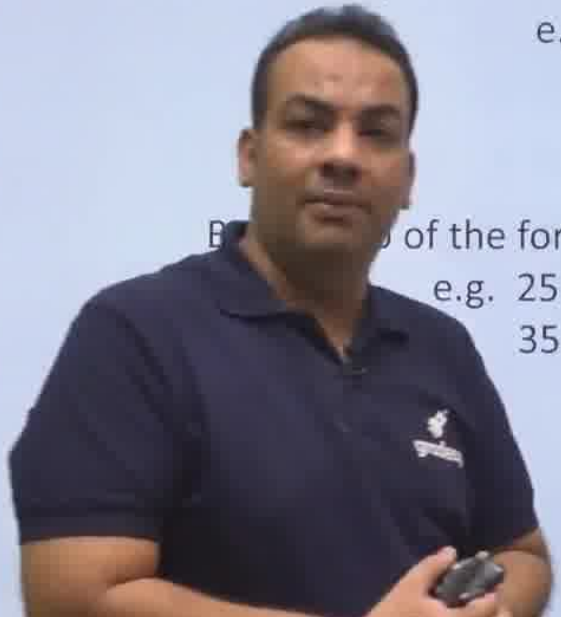

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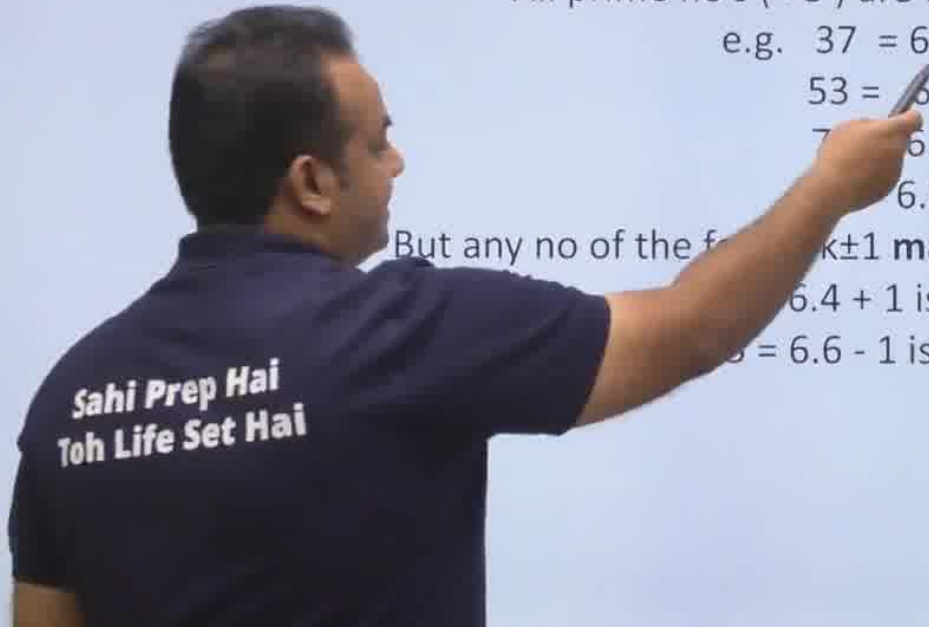
But any no of the f k±1 **may or may not be prime.**

6.4 + 1 is **not prime**

= 6.6 - 1 is **not prime**



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Important property of **Prime number**

5
7
11
13
29
73
9

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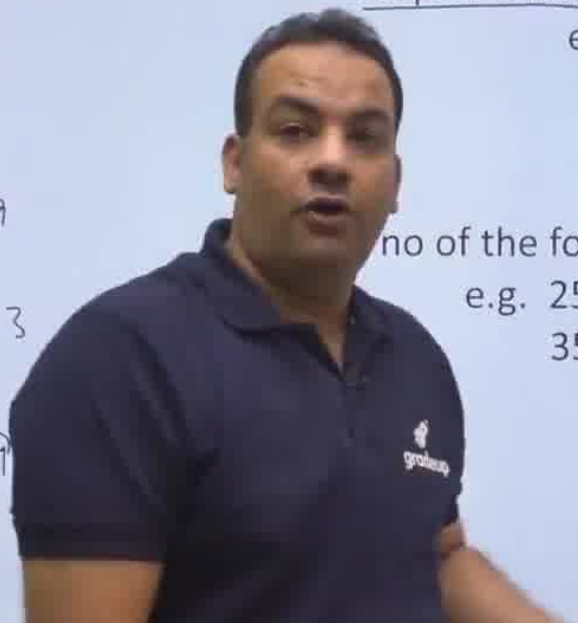

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Important property of **Prime number**

5 → 6 1 − 1

7 → 6 1 + 1

11 → 6 2 − 1

13 → 6 2 + 1

29 → 6 5 − 1

73 → 6 12

97 →

All prime no's (>3) are of the form **6k ± 1**

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[illegible]25 = 6.4 + 1 is **not prime**

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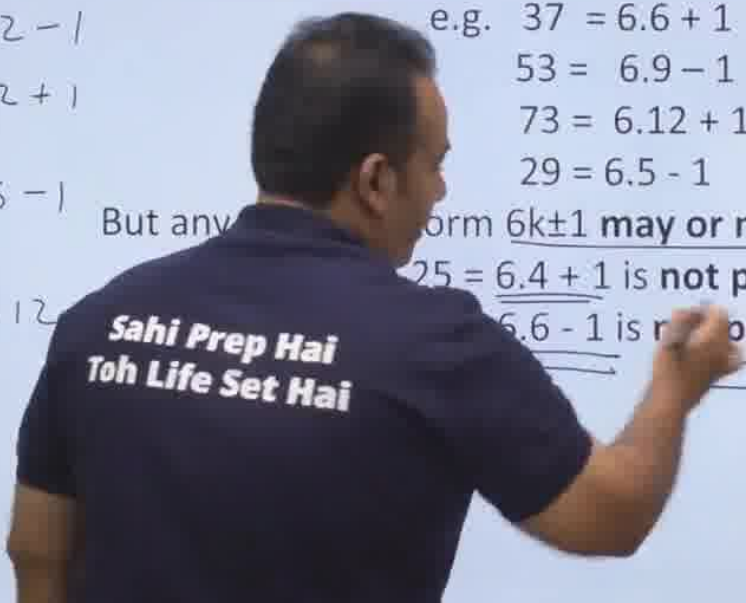

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Any Prime no > 3

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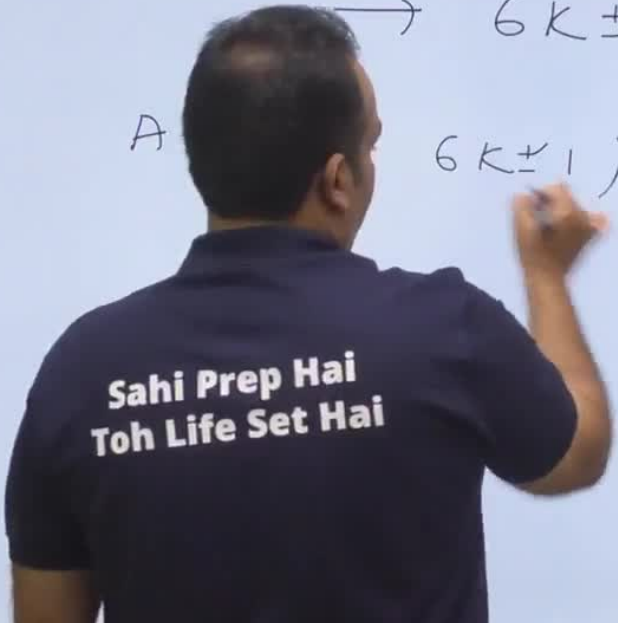
Any Prime no > 3 is always of the form

$\longrightarrow 6k \pm 1$

A ($6k \pm 1$)



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Any Prime no > 3 is always of the form

$\rightarrow 6K \pm 1$

A number of $(6K \pm$ [illegible] or may not be pri[illegible]

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Natural / 6 → Remainder

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Natural / 6 → Remainder 0,

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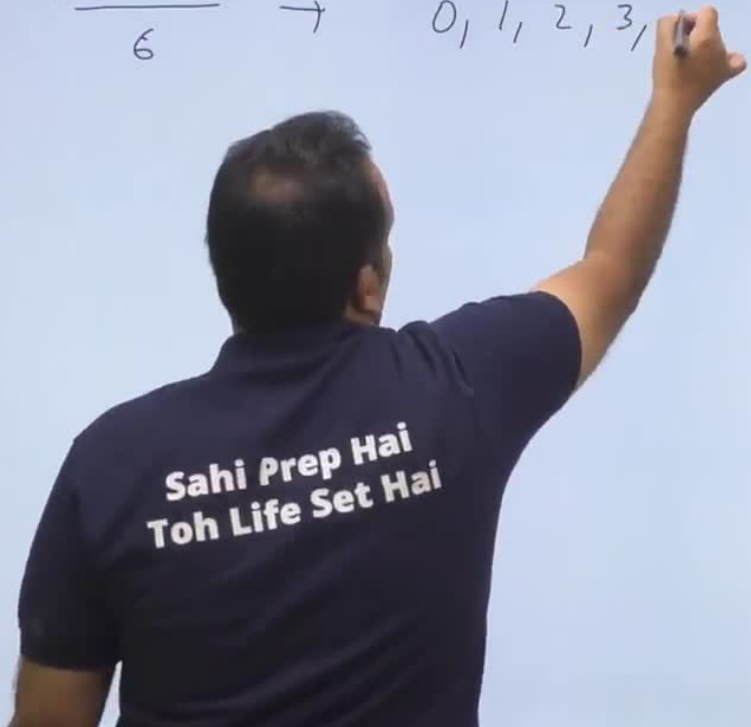
$\frac{\text{Natural}}{6} \rightarrow$ Remainder

0, 1, 2, 3,



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Natural / 6 → Remainder 0, 1, 2, 3, 4 or 5

...ural →

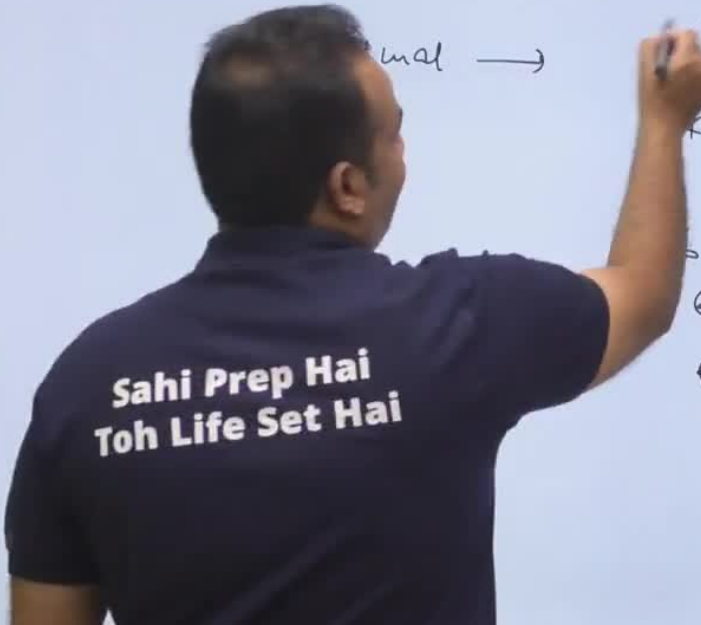
6K+1

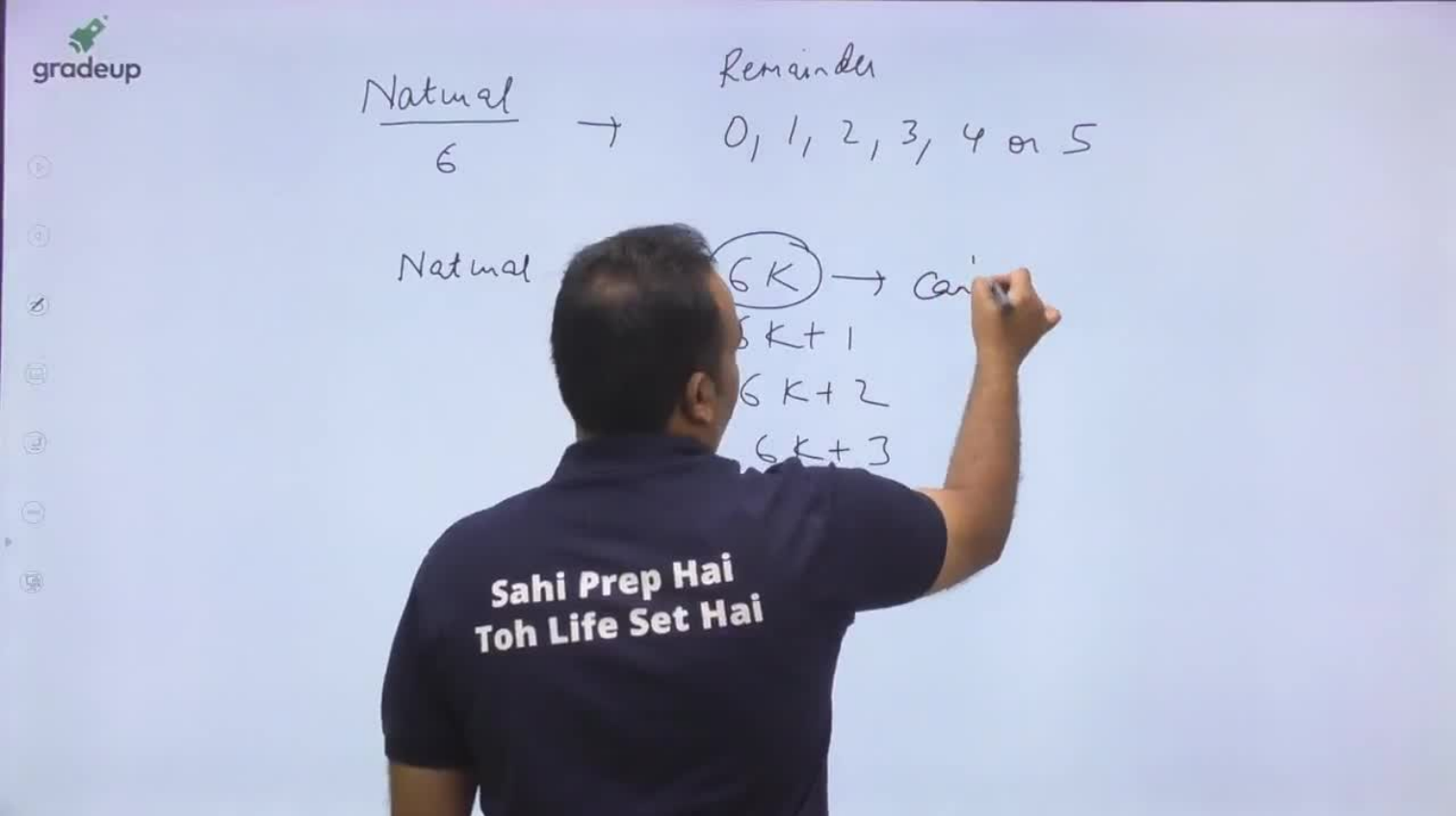
6K+2

6K+3

6K+4

6K+5




gradeup
Natural / 6 → Remainder
0, 1, 2, 3, 4 or 5
Natural
6K
6K+1
6K+2
6K+3
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Toh Life Set Hai

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$\frac{\text{Natural}}{6} \rightarrow$ Remainder $0, 1, 2, 3, 4$ or 5

Natural $\longrightarrow$ $\rightarrow$ Can't be p

$+1$

$+2$

$K+3$

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Natural / 6 → Remainder

0, 1, 2, 3, 4 or 5

Na → 6K → can't be prime

6K+1

6K+2

6K+

6K

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gradeup

$\frac{\text{Natural}}{6} \rightarrow$ Remainder

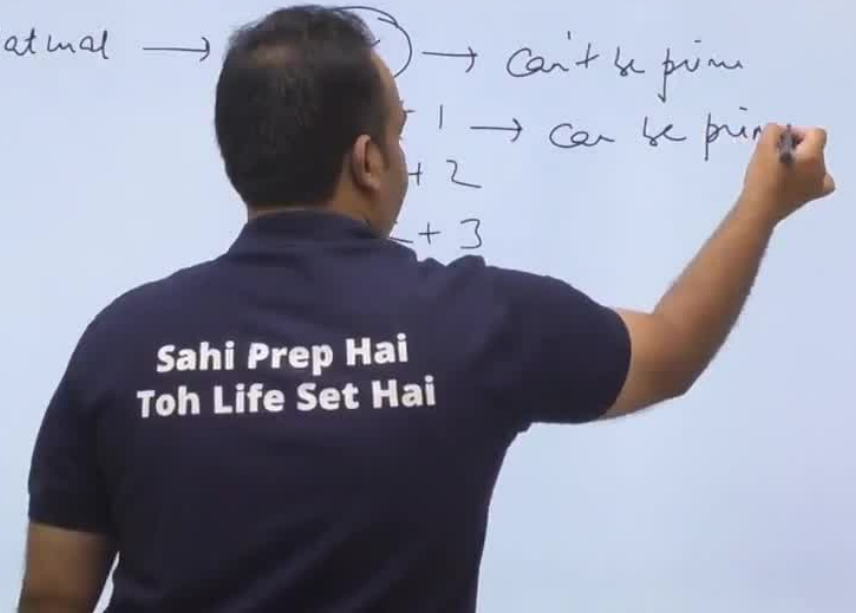
0, 1, 2, 3, 4 or 5

Natural $\longrightarrow$ $\rightarrow$ Can't be prime

$+1 \rightarrow$ Can be prime

$+2$

$+3$



gradeup

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Natural $\longrightarrow$ $\rightarrow$ can't be prime

$+1 \rightarrow$ can be prime

$+2 \rightarrow$ can't be prime

$+3$

Sahi Prep Hai
Toh Life Set Hai

gradeup

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$+1 \rightarrow$ Can be prime

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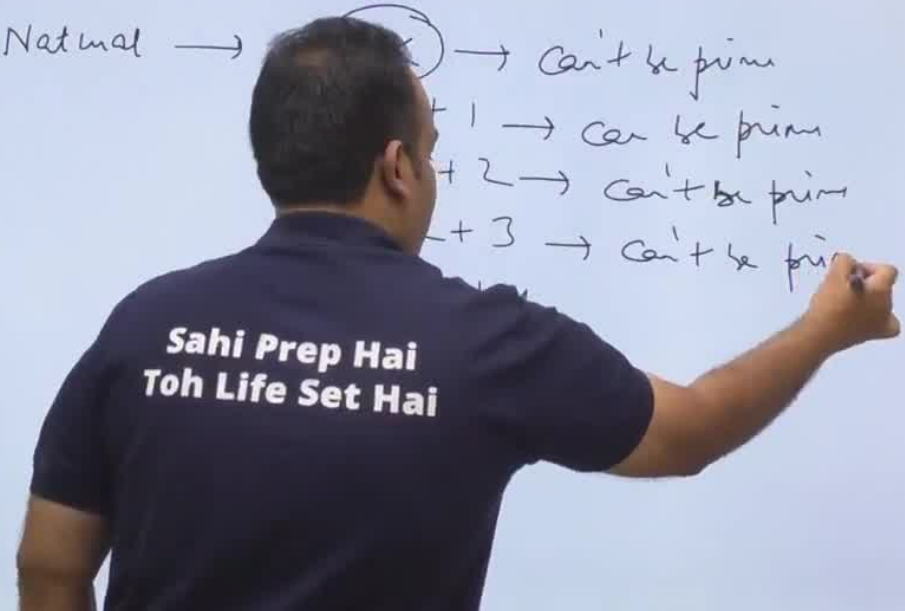
$+3 \rightarrow$ Can't be prime



gradeup

$\frac{\text{Natural}}{6} \rightarrow$ Remainder $0, 1, 2, 3, 4$ or 5

Nat → $6K \rightarrow$ can't be prime

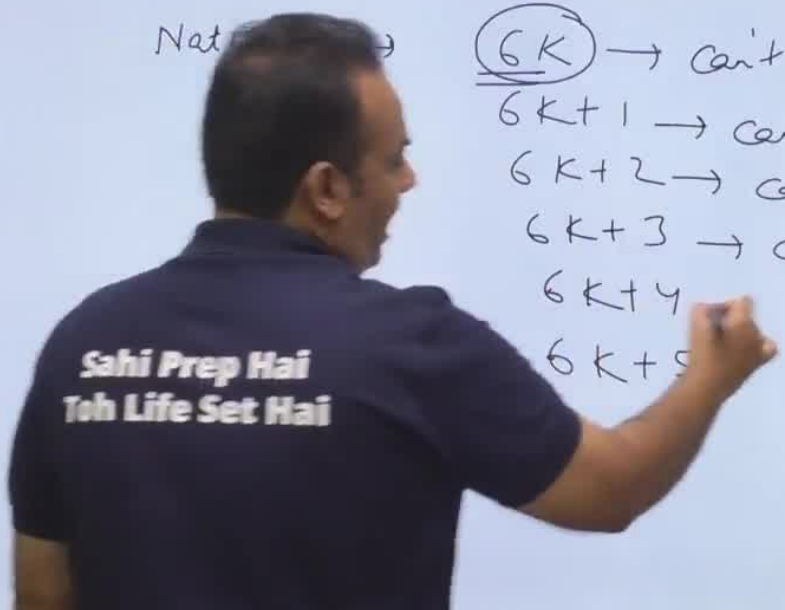
$6K+1 \rightarrow$ can be prime

$6K+2 \rightarrow$ can't be prime

$6K+3 \rightarrow$ can't be prime

$6K+4$

$6K+5$



gradeup

$\frac{\text{Natural}}{6} \rightarrow$ Remainder $0, 1, 2, 3, 4$ or 5

Natural $\longrightarrow$ $\rightarrow$ Can't be prime

$\rightarrow$ Can be prime

$2 \rightarrow$ Can't be prime

$+3 \rightarrow$ Can't be prime

$+4 \rightarrow$ Can't be prime

$\rightarrow$ Can

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$\frac{\text{Natural}}{6} \rightarrow$ Remainder

0, 1, 2, 3, 4 or 5

Na → 6K → can't be prime

6K+1 → can be prime

6K+2 → can't be prime

6K+3 → can't be prime

6K+4 → can't be prime

6K+5 → can be prime

6K+1

6K+5

-1

1

(-1)

gradeup

Important property of **Prime number**

5 → 6 1 − 1

7 → 6 1 + 1

11 → 6 2 −

13 → 6 2

29 → 6 5 −

73 → 6

97

All prime no's (>3) are of the form **6k ± 1**

e.g. 37 = 6.6 + 1

53 = 6.9 − 1

6.12 + 1

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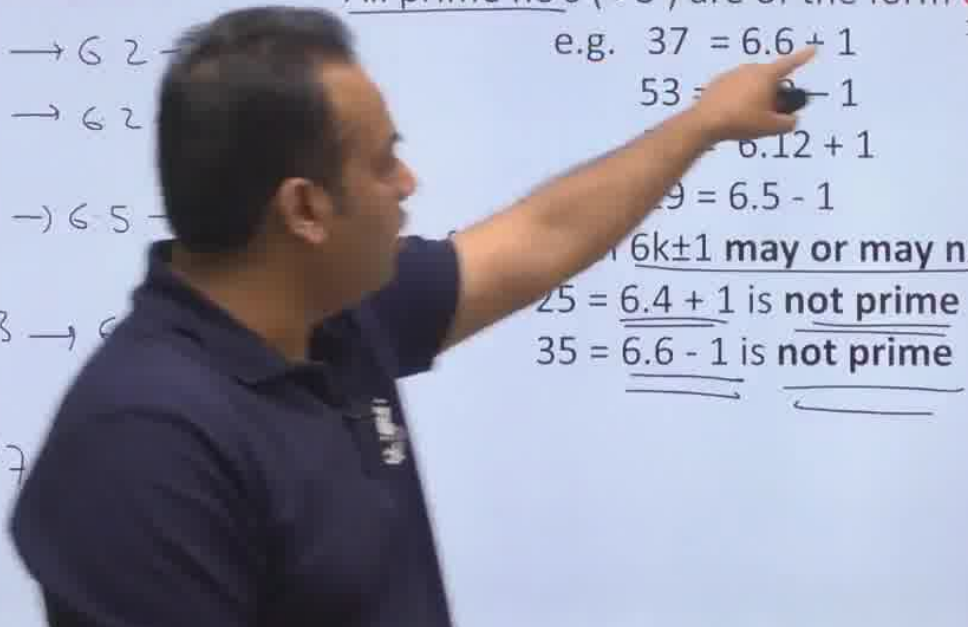

gradeup

Important property of **Prime number**

$5 \rightarrow 6(1) - 1$

$7 \rightarrow 6(1) + 1$

$11 \rightarrow 6(2) - 1$

$13 \rightarrow 6(2) + 1$

$29 \rightarrow 6(5) - 1$

$73 \rightarrow 6(12) + 1$

$97 \rightarrow 6(16) + 1$

All prime no's (>3) are of the form **6k ± 1**

e.g. $6.6 + 1$

$.9 - 1$

$12 +$

5

But any no of the **may not be prime.**

e.g. **not prime**

is not prime

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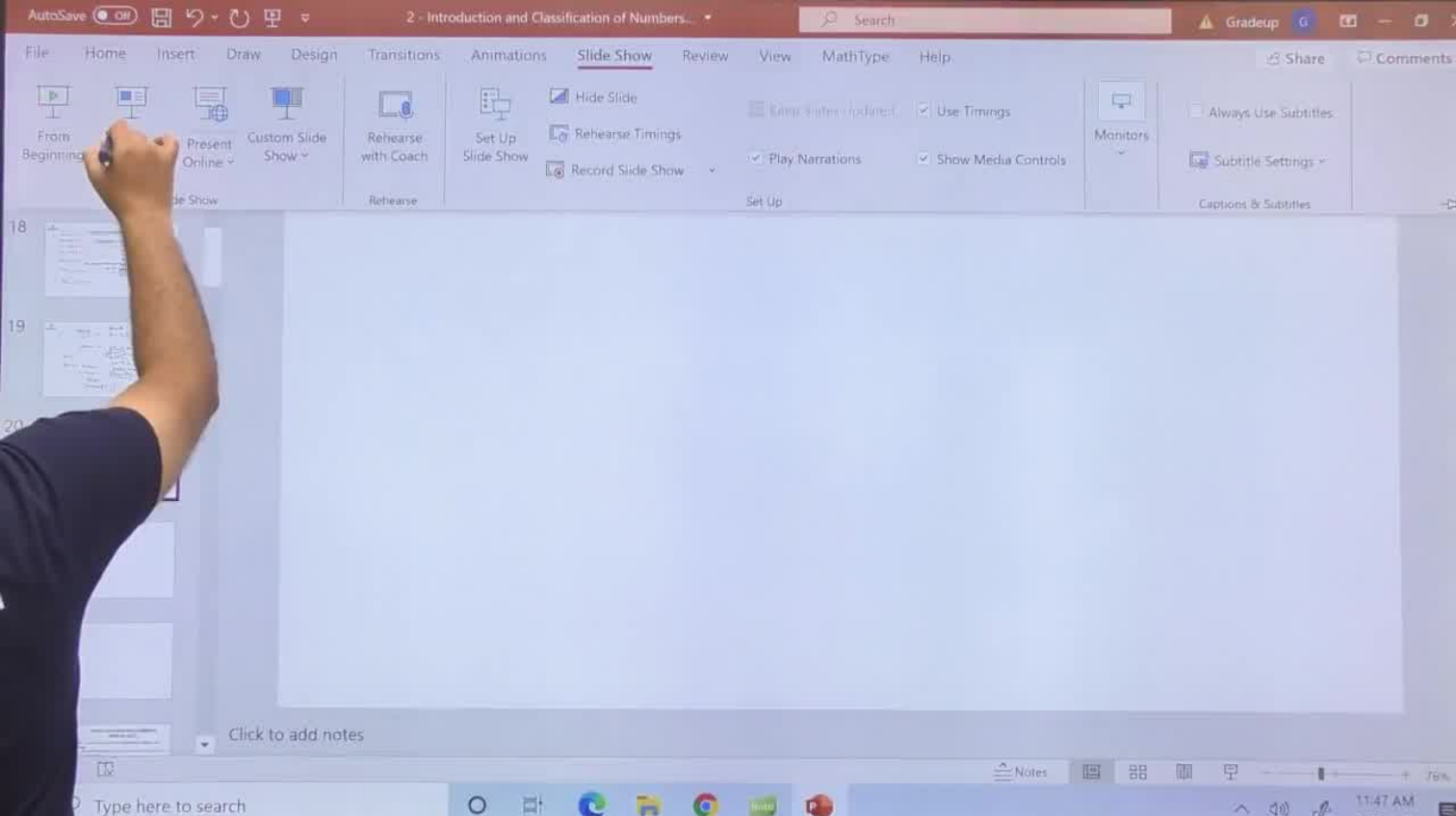
Perfect number


AutoSave
Off
2 - Introduction and Classification of Numbers...
Search
Gradeup
File
Home
Insert
Draw
Design
Transitions
Animations
Slide Show
Review
View
MathType
Help
Share
Comments
From Beginning
Present Online
Custom Slide Show
Rehearse with Coach
Set Up Slide Show
Hide Slide
Rehearse Timings
Record Slide Show
Play Narrations
Use Timings
Show Media Controls
Monitors
Always Use Subtitles
Subtitle Settings
Rehearse
Set Up
Captions & Subtitles
18
19
Click to add notes
Notes
Type here to search
11:47 AM

gradeup

Factor

20 → 1, 2,

gradeup

Factor

20 → 1, 2, 4, 5

gradeup

Factor

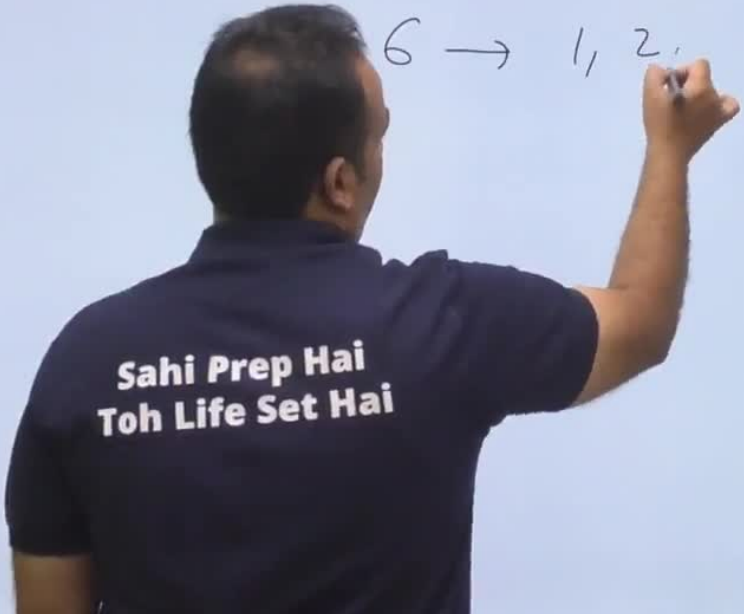
20 → 1, 2, 4, 5, 10, 20

gradeup

Factor

20 → 1, 2, 4, 5, 10, 20

6 → 1, 2,



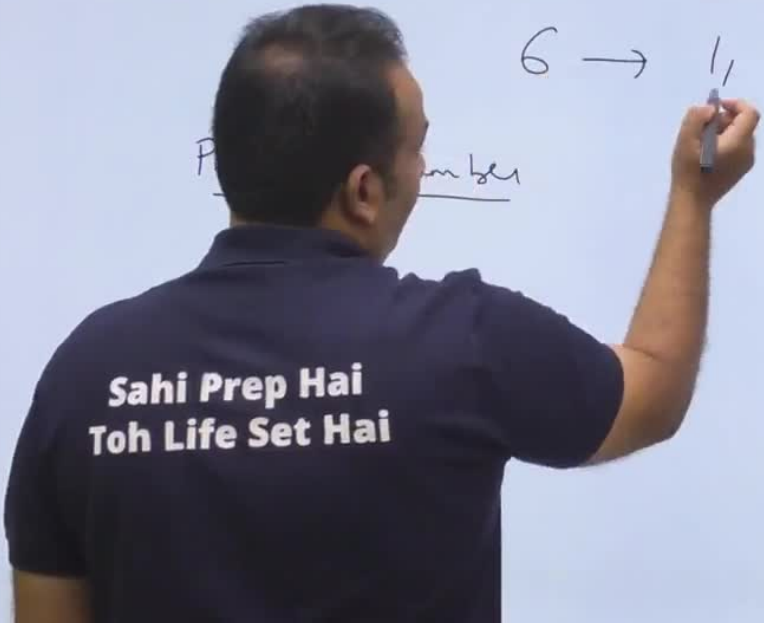
gradeup

Factor

20 → 1, 2, 4, 5, 10, 20

6 → 1, 2, 3, 6

P... number



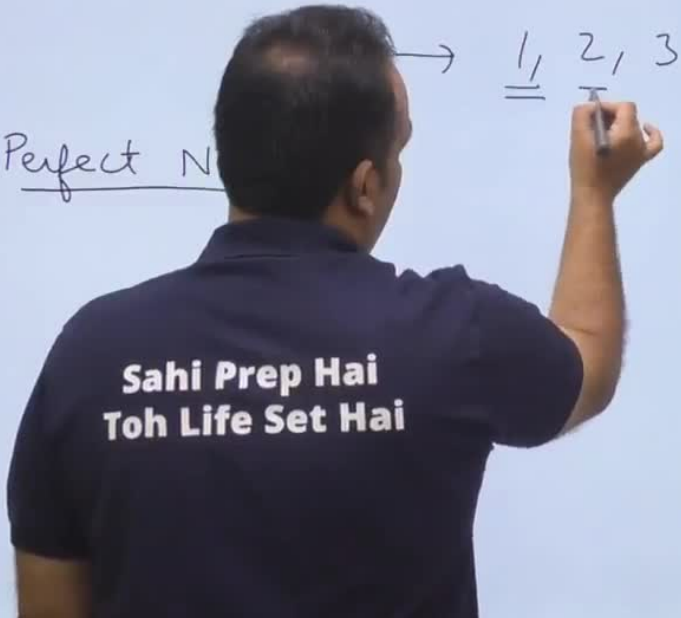
gradeup

Factor

20 → 1, 2, 4, 5, 10, 20

→ 1, 2, 3, 6

Perfect N



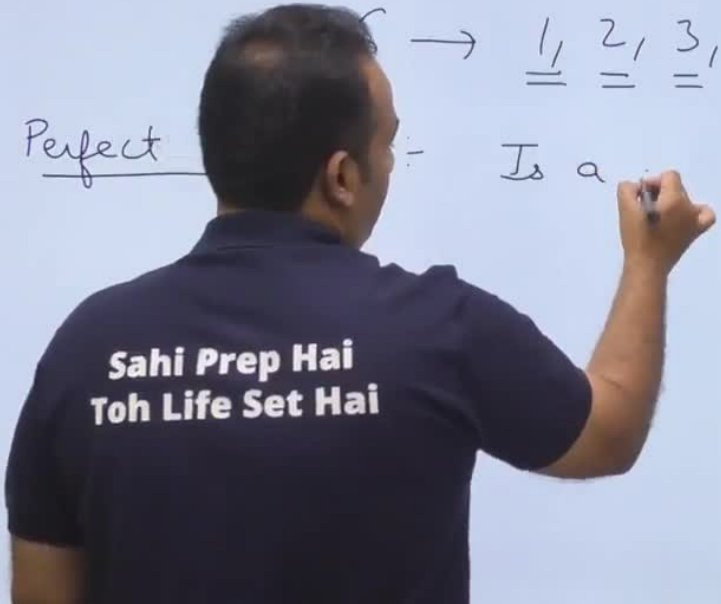
gradeup

Factor

20 → 1, 2, 4, 5, 10, 20

→ 1, 2, 3, 6

Perfect - Is a



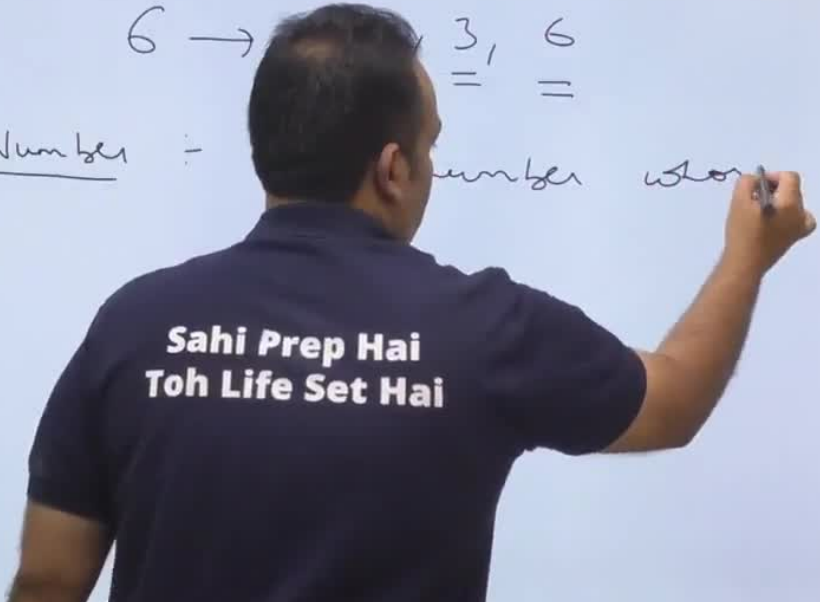
gradeup

Factor

20 → 1, 2, 4, 5, 10, 20

6 → 1, 2, 3, 6
= =

Perfect Number - number whose



gradeup

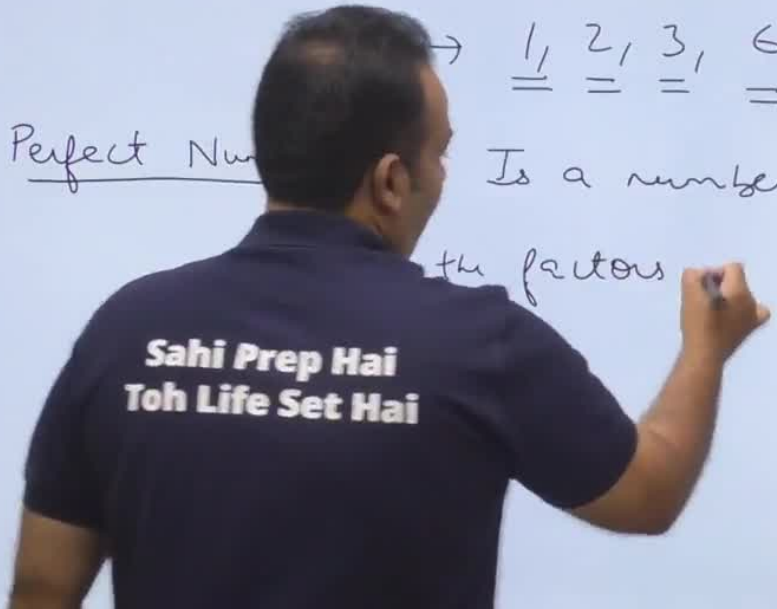
Factor

20 → 1, 2, 4, 5, 10, 20

→ 1, 2, 3, 6
= = = =

Perfect Nu... Is a number whose sum of

...th factors



gradeup

Factor

20 → 1, 2, 4, 5, 10, 20

6 → 1, 2, 3

Perfect Number - Is a nu... whose sum of all the fact... ding that numb...

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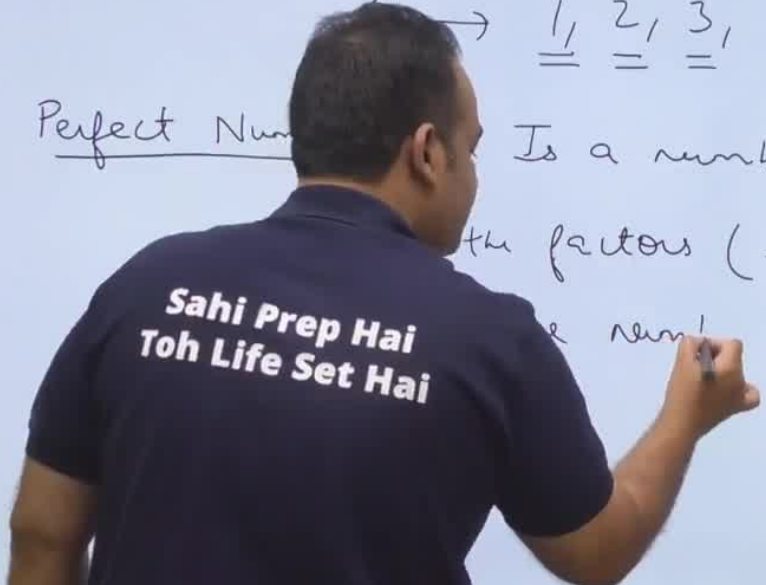
Factor

20 → 1, 2, 4, 5, 10, 20

6 → 1, 2, 3, 6

Perfect Num... Is a number whose sum of ...th factors (excluding that number) ... num...



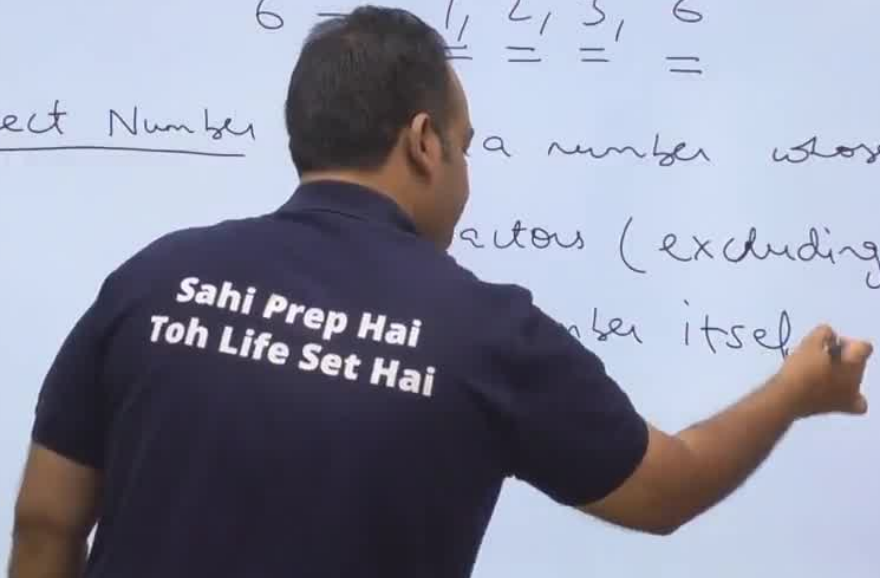
gradeup

Factor

20 → 1, 2, 4, 5, 10, 20

6 → 1, 2, 3, 6

Perfect Number → a number whose sum of factors (excluding that number) = number itself



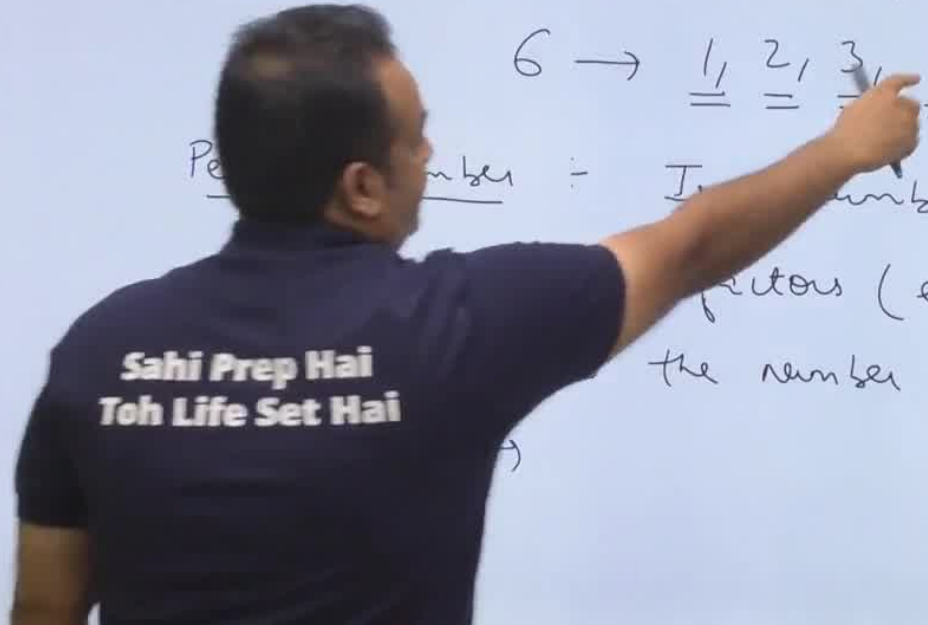
gradeup

Factor

20 → 1, 2, 4, 5, 10, 20

6 → 1, 2, 3, 6

Pe[illegible]mber - I[illegible]umber whose sum of
[illegible]ctors (excluding that number)
the number itself.



gradeup

Factor

20 → 1, 2, 4, 5, 10, 20

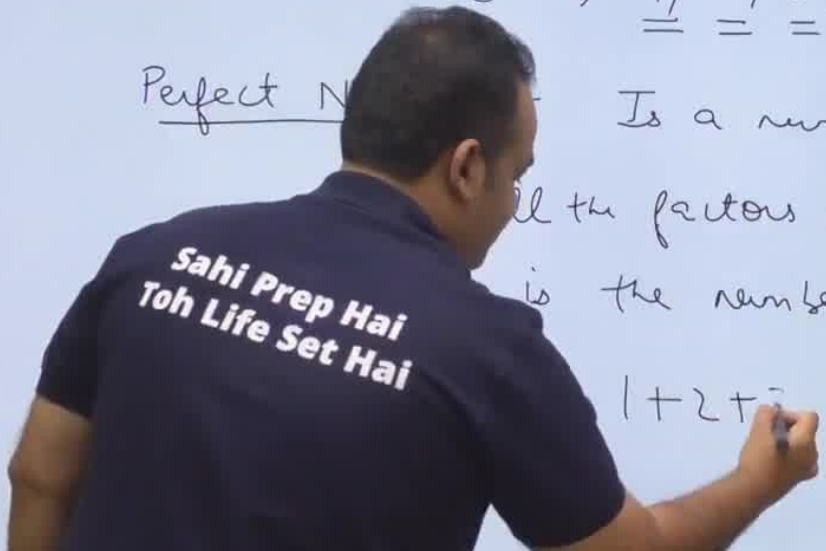
6 → 1, 2, 3, 6

Perfect N... Is a number whose sum of

...ll the factors (excluding that number)

... is the number itself.

1+2+...



gradeup

Factor

20 → 1, 2, 4, 5, 10, 20

6 → 1, 2, 3, 6

= = = =

mber - If a number whose sum of
a th factors (excluding that number)
is the number itself

1+2+3 = 6

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14 → 1, 2, 7

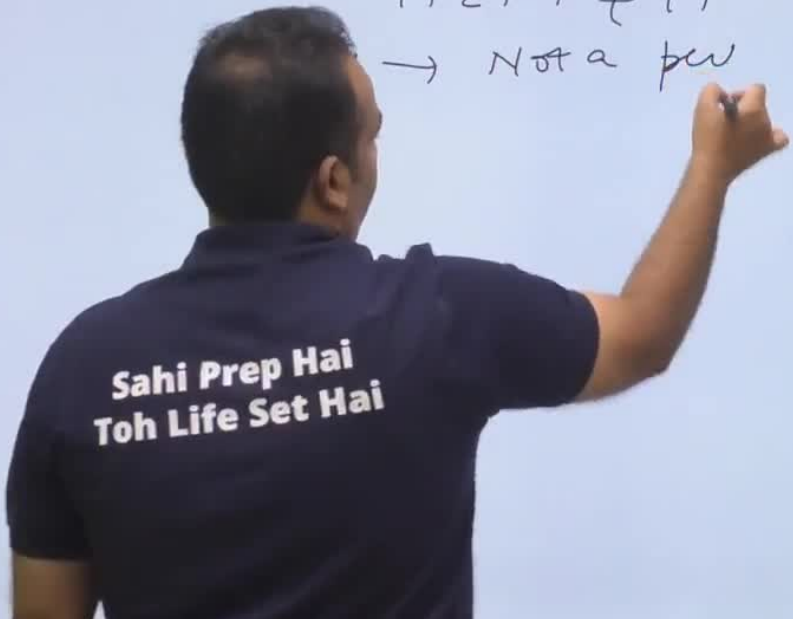
gradeup

14 → 1, 2, 7, 1

$14 \rightarrow 1, 2, 7, 14$

$1+2+7 \neq 14$

$\rightarrow$ Not a pw



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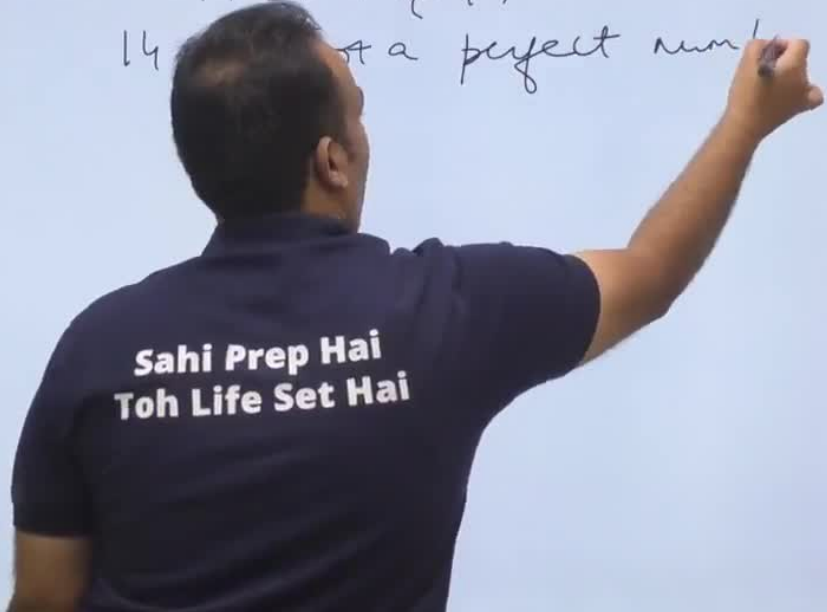
$14 \rightarrow 1, 2, 7, 14$

$1+2+7 \neq 14$

14 [illegible] a perfect num[illegible]



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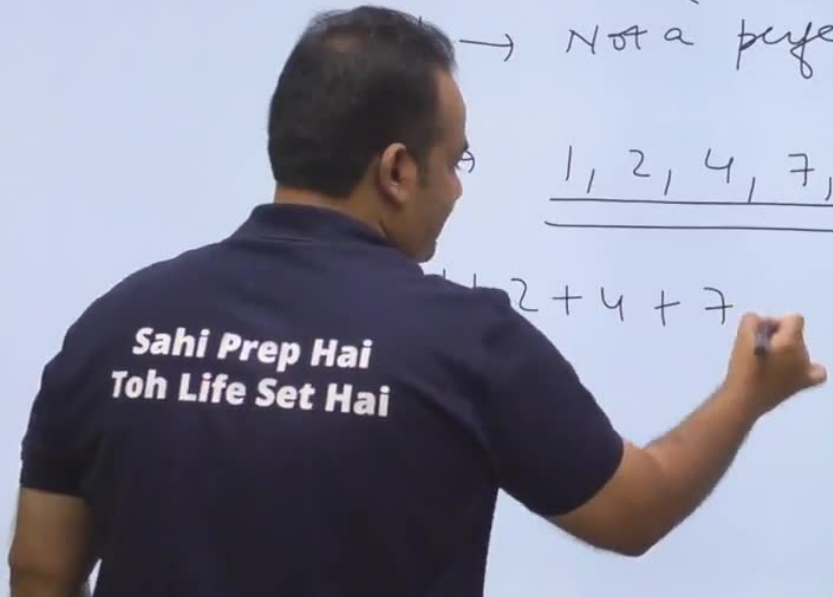
$14 \rightarrow 1, 2, 7, 14$

$1+2+7 \neq 14$

$\rightarrow$ Not a perfect number

$1, 2, 4, 7, 14, 28$

$1+2+4+7$



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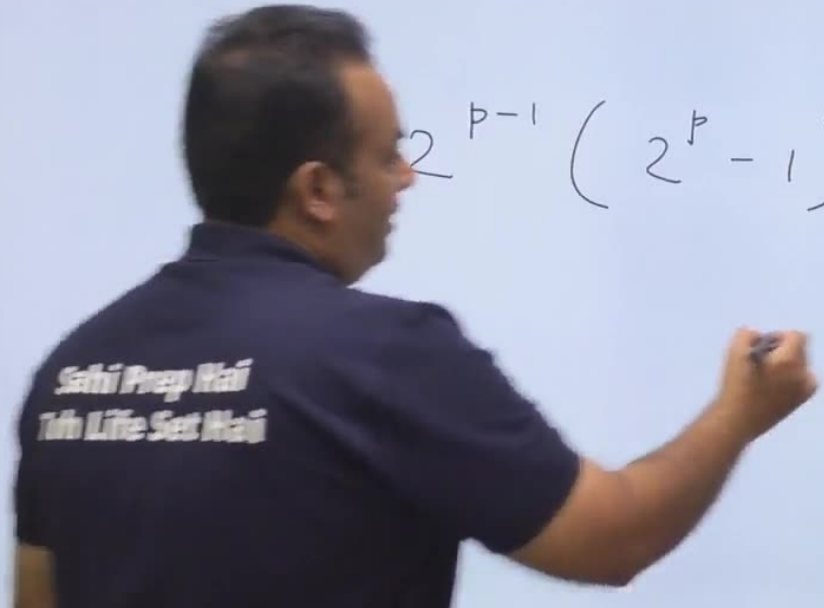
Perfect numbers

→ 6, 28, - - -

$$2^{p-1}\left(2^{p}-1\right)$$



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Perfect numbers

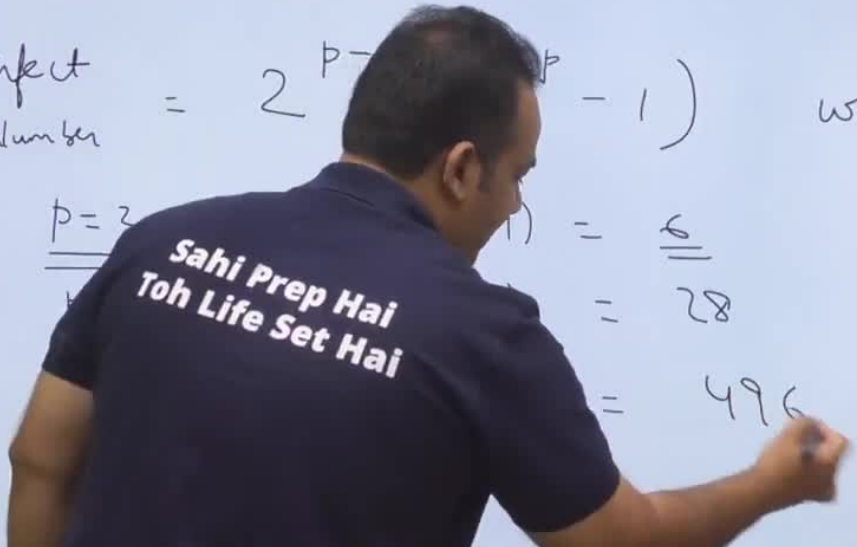
⟶ 6, 28, - -

Perfect Number = $2^{p-1}(2^p - 1)$ where p → prime

$p = 2$ ... $= 6$

... $= 28$

... $= 496$



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Perfect number

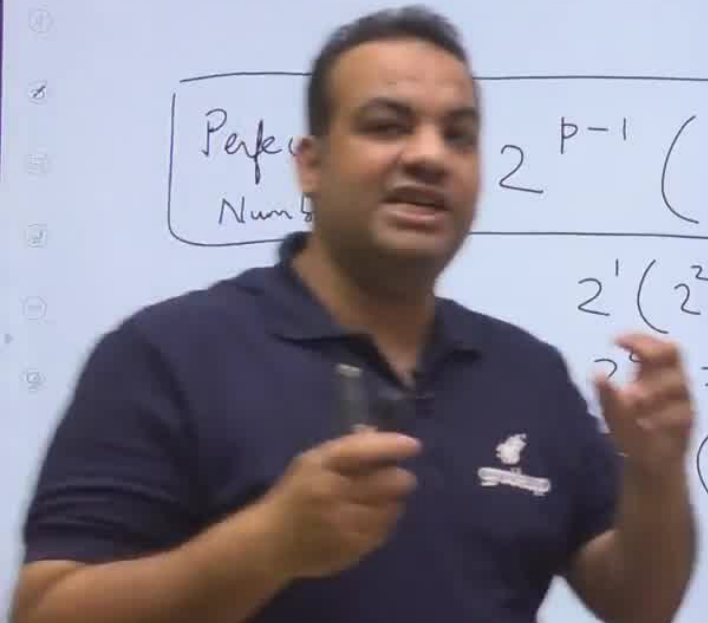
→ 6, 28, - -

Perfect Number $2^{p-1}(2^p - 1)$ where p → prime

$2^1(2^2-1) = 6$

$2^2(2^3-1) = 28$

$2^4(31) = 496$



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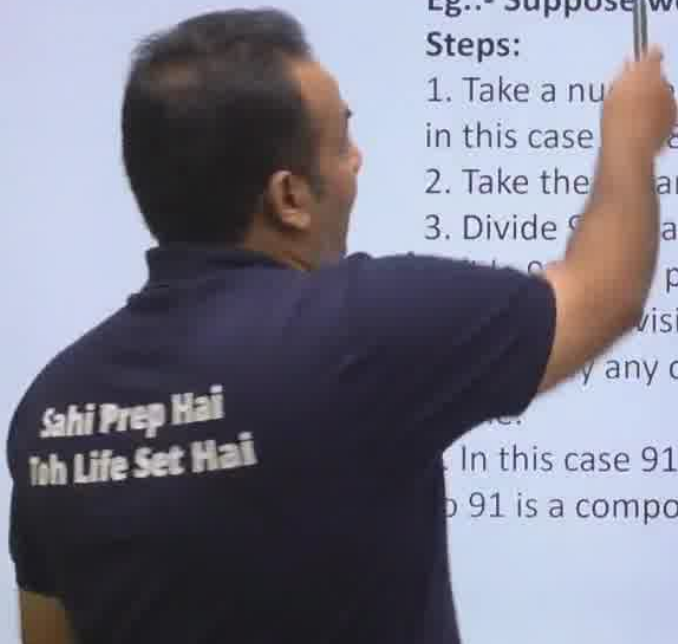
HOW TO CHECK WHETHER A NUMBER IS PRIME OR NOT??

Eg.:- Suppose we have to check whether 91 is prime or not

Steps:

1. Take a nu r which is just less than 91 & is a perfect square, in this case 81.
2. Take the are root of 81 i.e. 9.
3. Divide all the prime numbers less than or equal to 9 and prime no. 2, 3, 5, 7, and check whether 91 is visible by any one of the following prime no if it is y any one, then the given no is composite else it is

In this case 91 is not divisible by 2, 3, 5 but 91 is divisible by 7. o 91 is a composite number.



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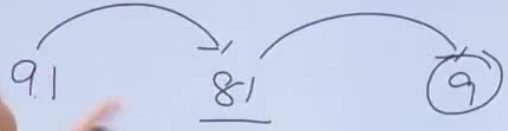
91 → Prime or not



2, 3, 5, 7
× × × ✓

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91 → Prime or not

91 → 81 → 9

2, 3, 5, 7

Composite Numb

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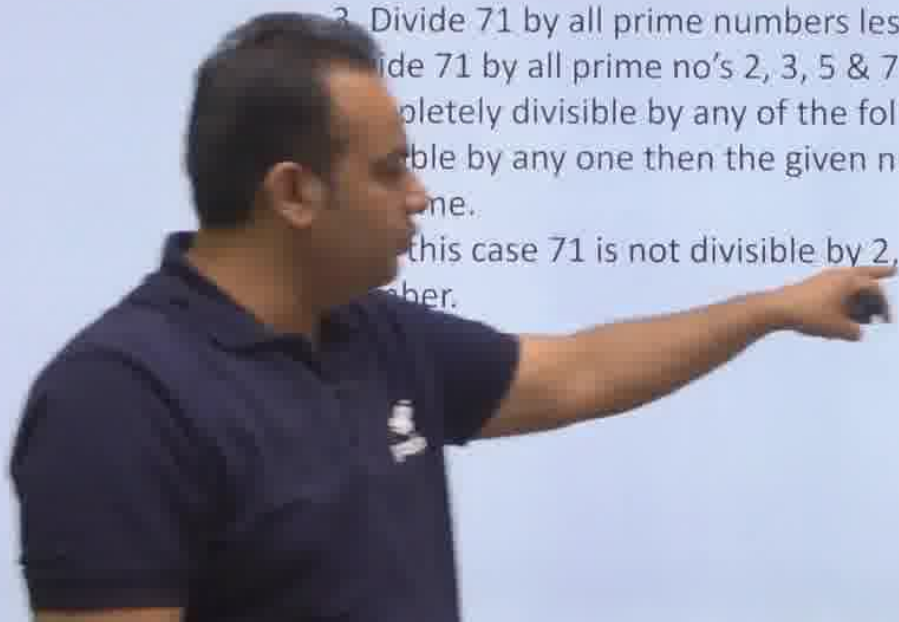
Eg. Check whether 71 is prime or not.

1. Take a number which is just less than 71 & is a perfect square, in this case it is 64.
2. Take the square Root of 64 i.e. 8.
3. Divide 71 by all prime numbers less than or equal to 8 and ide 71 by all prime no's 2, 3, 5 & 7 and check whether 71 is pletely divisible by any of the following prime number, if it is ble by any one then the given number it is composite else ne.

this case 71 is not divisible by 2, 3, 5 & 7 so 71 is a prime ber.



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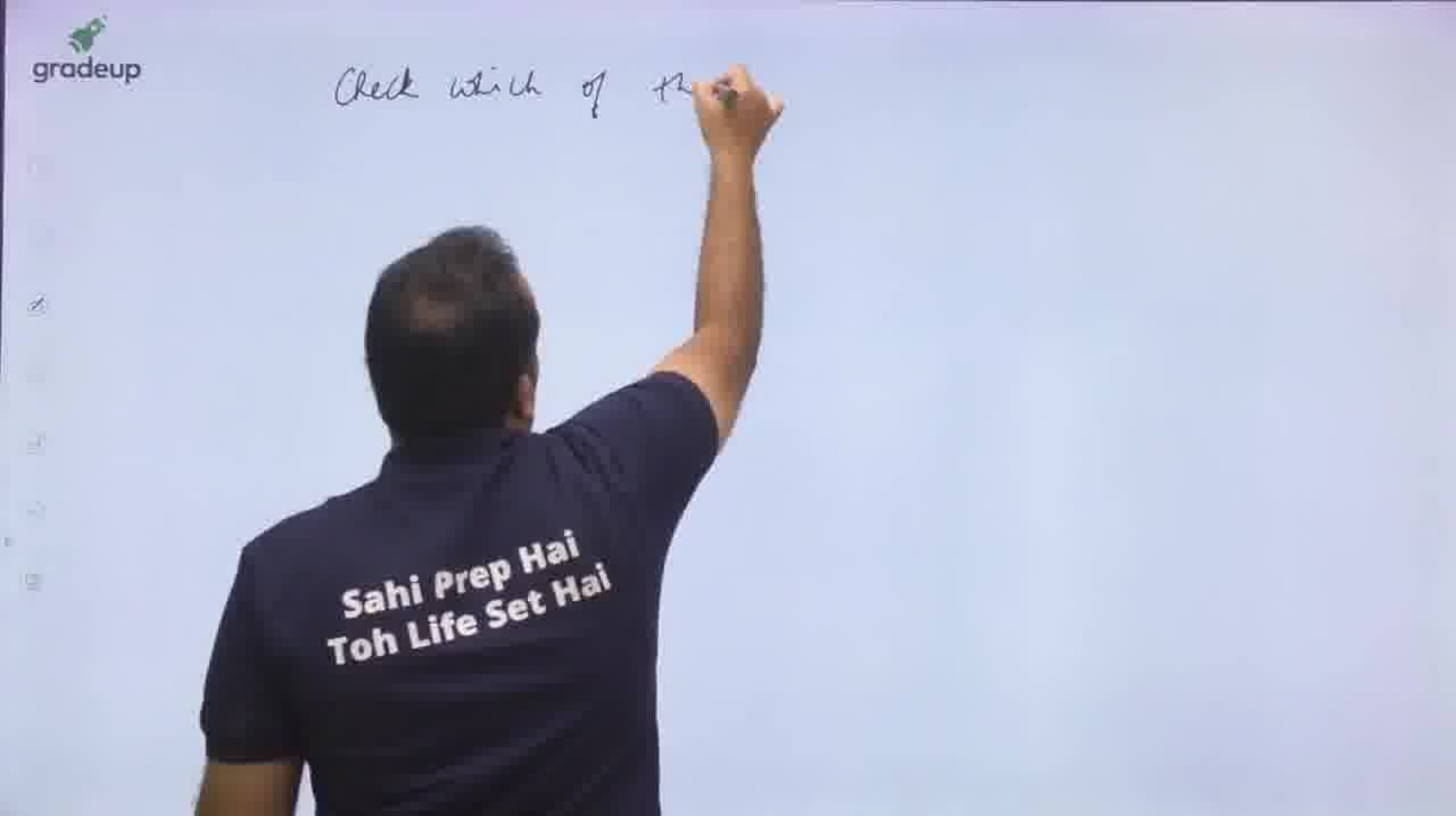
Eg. Check whether 71 is prime or not.

1. Take a number which is just less than 71 & is a perfect square, in this case it is 64.
2. Take the square Root of 64 i.e. 8.
3. Di... 71 by all prime numbers less than or equal to 8 and di... ll prime no's 2, 3, 5 & 7 and check whether 71 is c... isible by any of the following prime number, if it is d... one then the given number it is composite else it...

...71 is not divisible by 2, 3, 5 & 7 so 71 is a prime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Check which of
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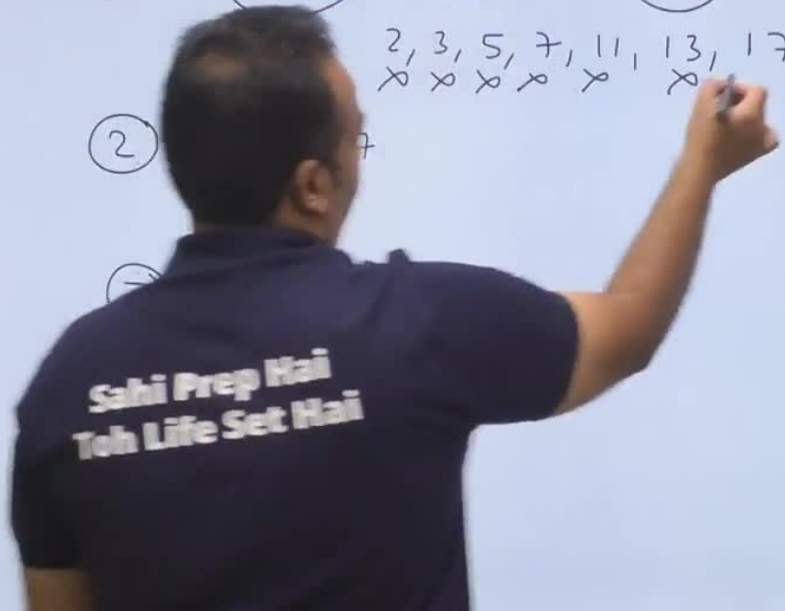
Check which of the following numbers are prim

(1) 313 289 17

2, 3, 5, 7, 11, 13, 17
× × × × × ×

(2)



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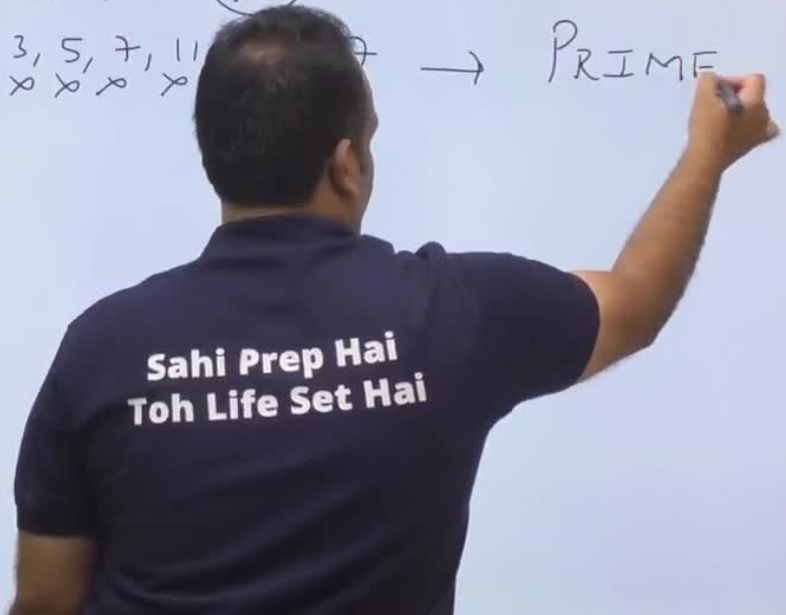
Check which of the following numbers are prim

① 313 289 17

2, 3, 5, 7, 11 → PRIME

② 437

③ 579



gradeup

Check which of the following numbers are prim

① 313 289 17

, 5, 7, 11, 13, 17 → PRIME

② 400 20

, 5, 7, 11, 13,

③

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Check which of the following numbers are prim

(1) 313 289 17

2, 3, 5, 7, 11, 13, 17 → PRIME

(2) 437 400 20

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

479

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Check which of the following numbers are prim

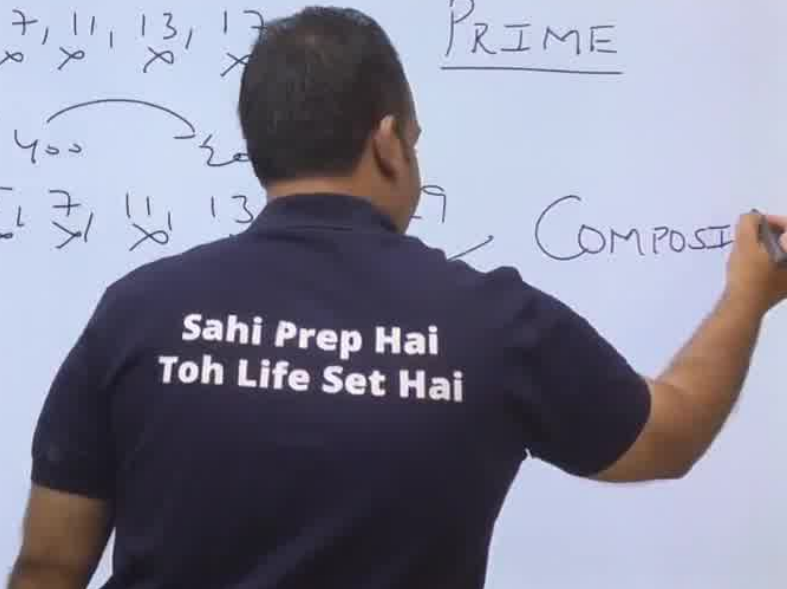
① 313 289 17

2, 3, 5, 7, 11, 13, 17 ✗ ✗ ✗ ✗ ✗ ✗ ✗ PRIME

② 437 400

2, 3, 5, 7, 11, 13 ✗ ✗ ✗ ✗ ✗ ✗ COMPOSI

③ 579



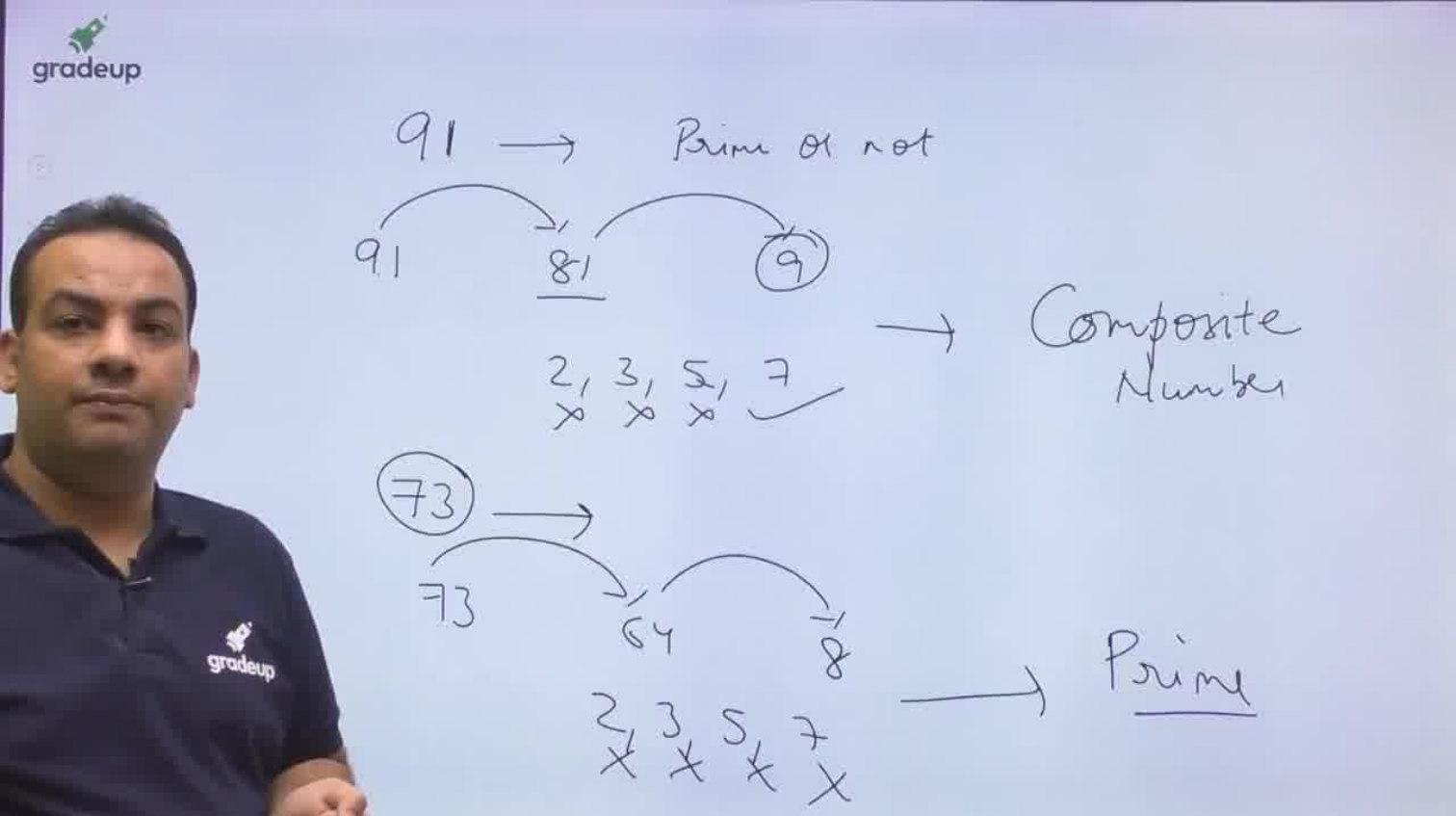
Eg. In a school, the total number of students is a prime number less than 400. Out of them P are boys and Q are girls. Which of the following can be the ratio of P and Q?

(a) 211 : 112

(b) 250 : 121

(c) 225 : 166

(d) 207 : 176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91 → Prime or not
91
81
9
2, 3, 5, 7
→ Composite Number
73 →
73
64
8
2 3 5 7
→ Prime
gradeup

gradeup

Check which of the following numbers are prim

① 313 289 17

3, 5, 7, 11, 13, 17 → PRIME

②

400

③

17, 19 COMPOSITE

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Toh Life Set Hai

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Eg. In a school, the total number of students is a prime number less than 400. Out of them P are boys and Q are girls. Which of the following can be the ratio of P and Q?

(a) 211 : 112
(b) 250 : 121
(c) 225 : 166
(d) 207 : 176

No of students < 400

P → Boy
Q → G

(a) 323

2, 3, 5, 7

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Toh Life Set Hai

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Eg. In a school, the total number of students is a prime number less than 400. Out of them P are boys and Q are girls. Which of the following can be the ratio of P and Q?

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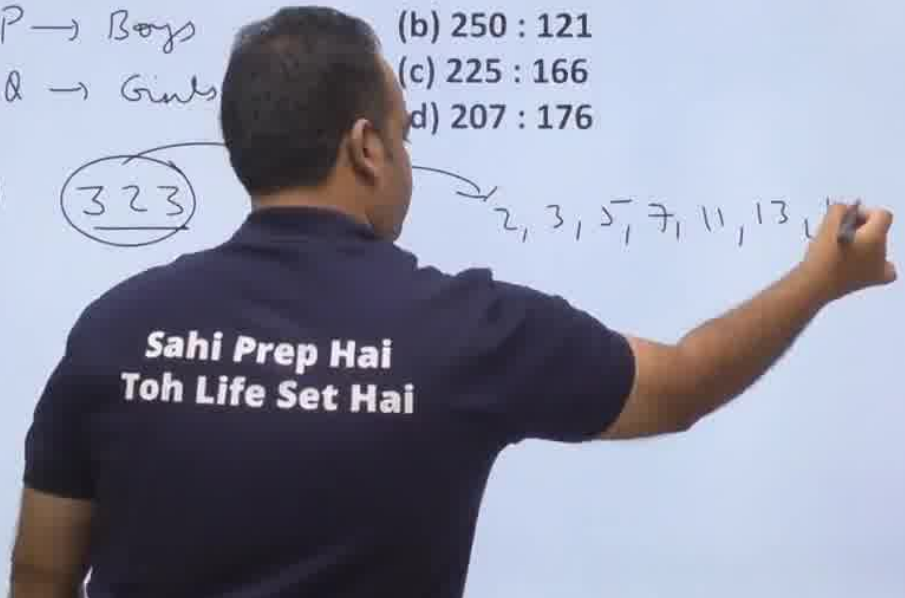
(c) 225 : 166
d) 207 : 176

No of students < 400

P → Boys
Q → Girls

(a) 323

2, 3, 5, 7, 11, 13,



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(b) 250 :

(c) 225

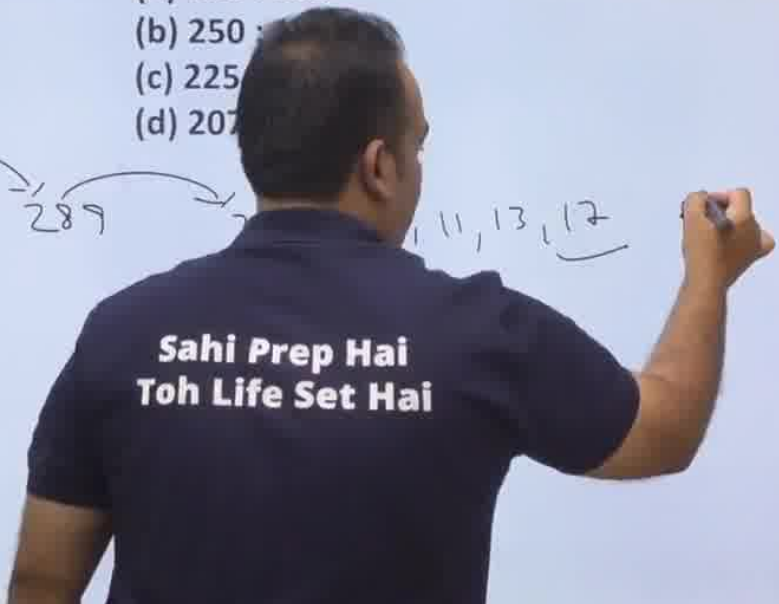
(d) 207

No of students < 400

P → Boys

Q → Girls

(a) 323 → 289 → , 11, 13, 17



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(a) 211 : 112
(b) 250 : 121
(c) 225 : 166
(d) 207 : 176

No of students < 400

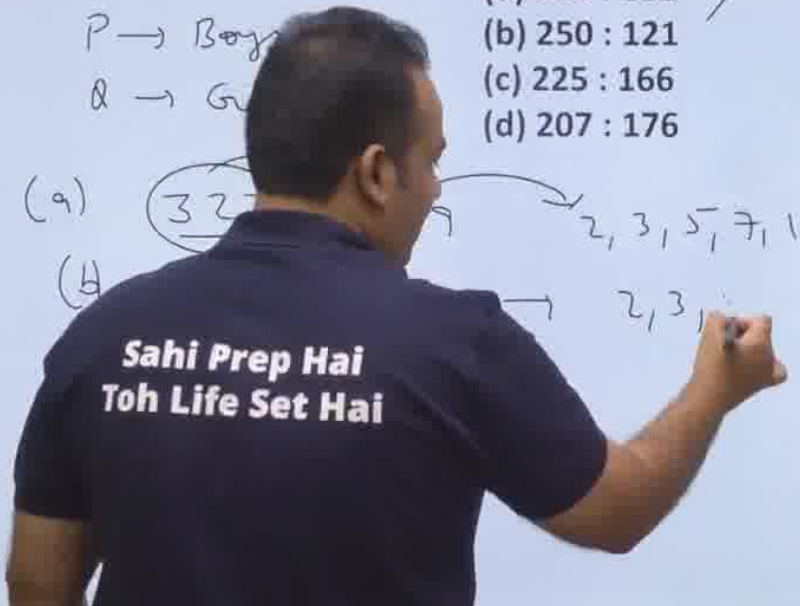
P → Boys

Q → Girls

(a) 32

2, 3, 5, 7, 11, 13, 17 Composite

(b) → 2, 3,



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(a) 211 : 112
(b) 250 : 121
225 : 166
207 : 176

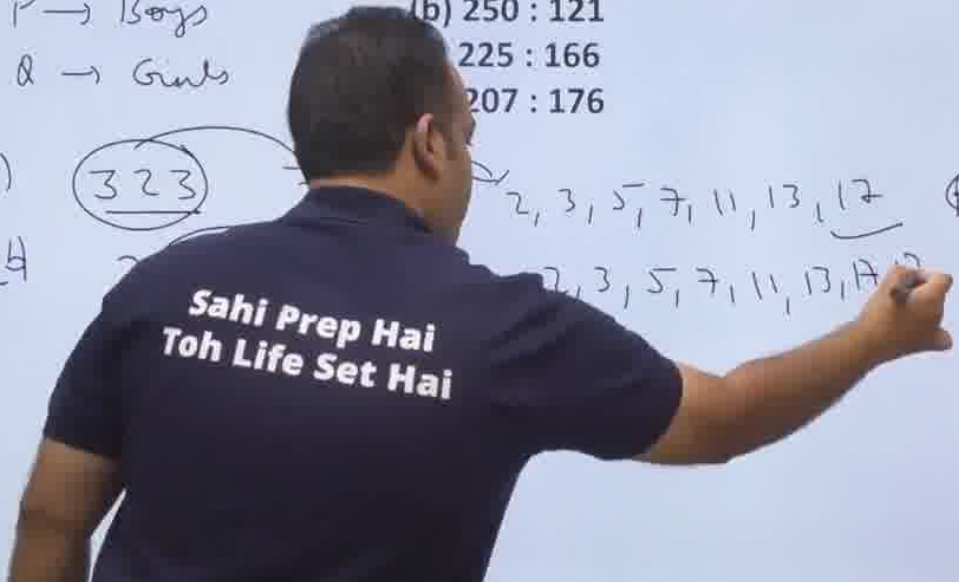
No of students < 400

P → Boys
Q → Girls

(a) 323

2, 3, 5, 7, 11, 13, 17 Composite

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



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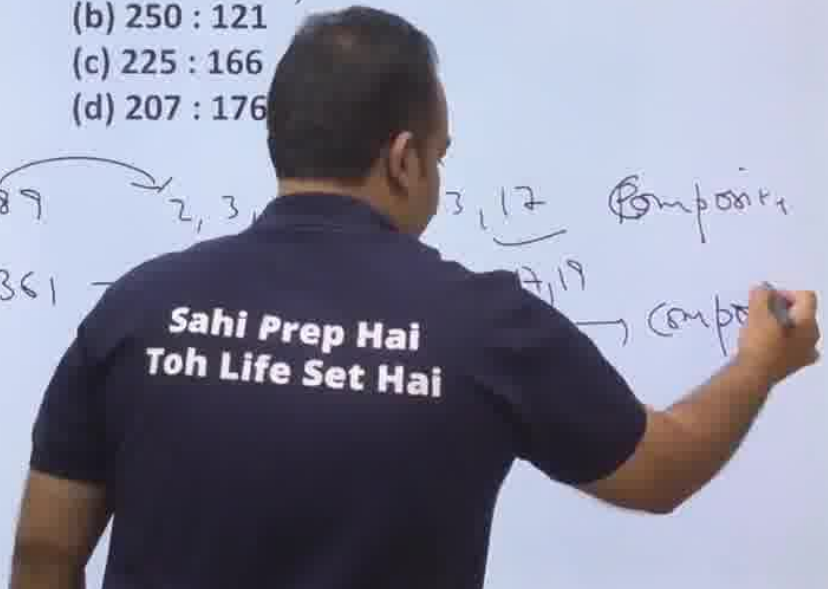
No of students < 400

P → Boys
Q → Girls

(a) 323 → 289 → 2, 3 ... 3, 17 Composite

(b) 371 → 361 → ... 7, 19 → Compo...



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(a) 211 : 112
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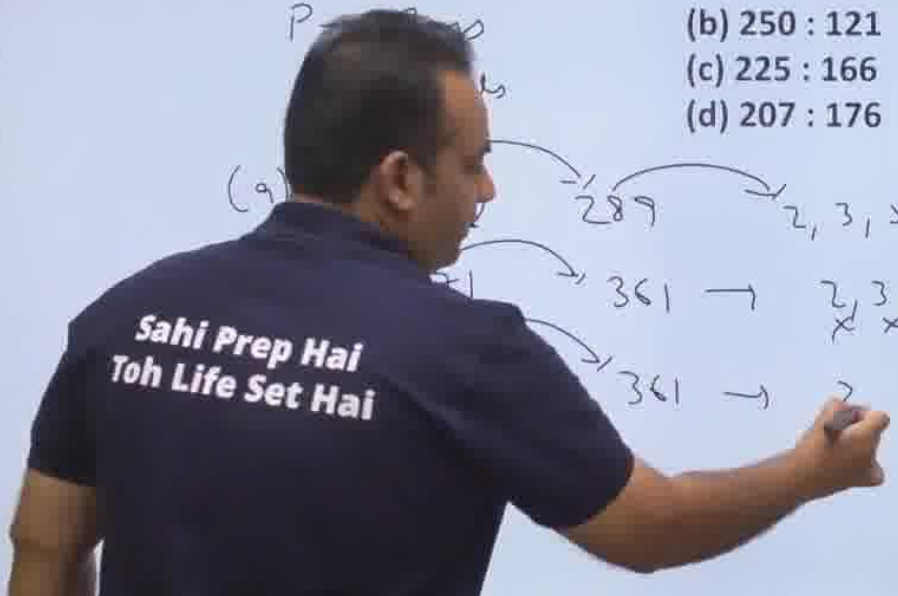
(d) 207 : 176

No of students < 400

289 → 2, 3, 5, 7, 11, 13, 17 Composite

361 → 2 3 5 7 11 13 17 19 → Composite

361 → 2



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No of students < 400

P → Boys

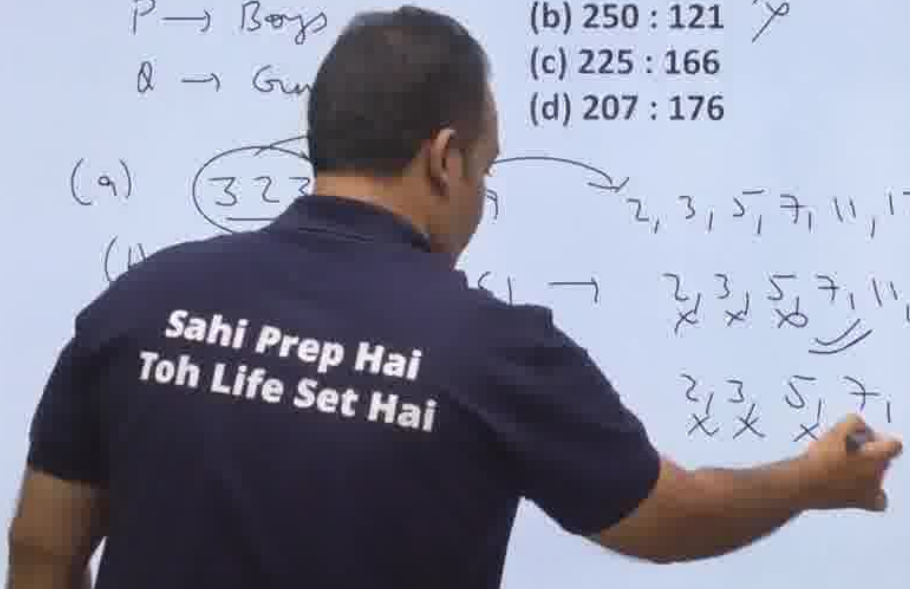
Q → Gu

(a) 323

2, 3, 5, 7, 11, 13, 17 Composite

2 3 5 7 11 13 17 19 → Composite

2 3 5 7 11 13 17 19



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(c) 225 : 166
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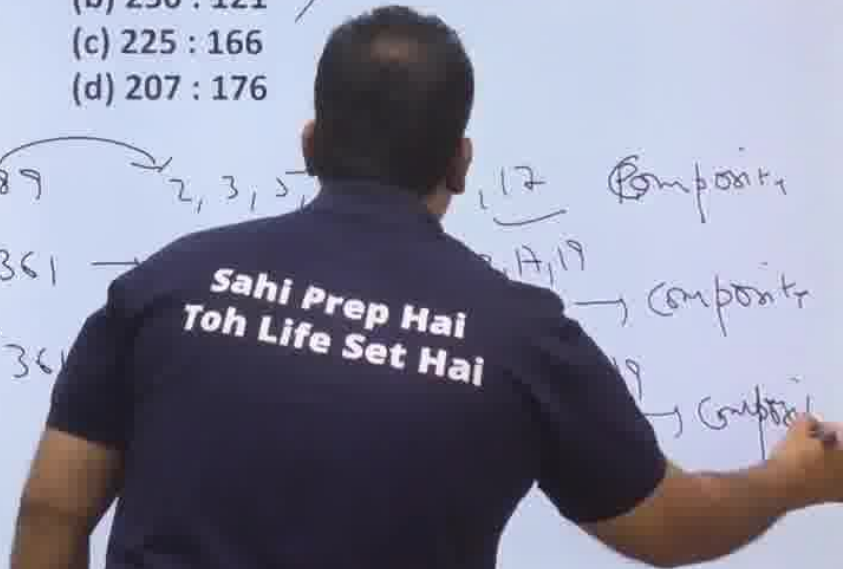
No of students < 400

P → Boys
Q → Girls

(a) 323 → 289 → 2, 3, 5, 7, 11, 17 → Composite

(b) 371 → 361 → 2, 3, 5, 7, 11, 13, 17, 19 → Composite

(c) 391 → 361 → 2, 3, 5, 7, 11, 13, 17, 19 → Composite



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P → Boys
Q → Girls

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(b) 371 → 361 → 2, 3, 5, 7, 11, 13, 17, 19 → Composite

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COPRIME NUMBERS

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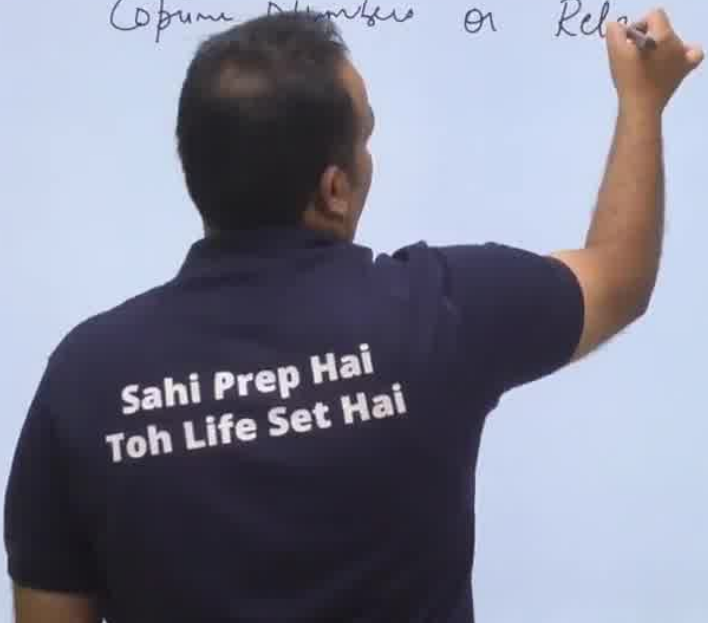
COPRIME NUMBERS

Coprime Numbers or Rel



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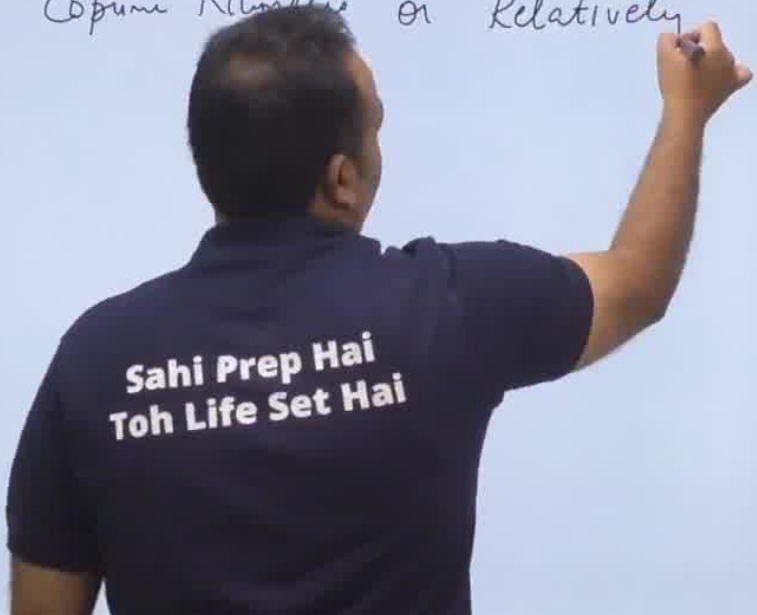
COPRIME NUMBERS

Coprime Numbers or Relatively



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COPRIME NUMBERS

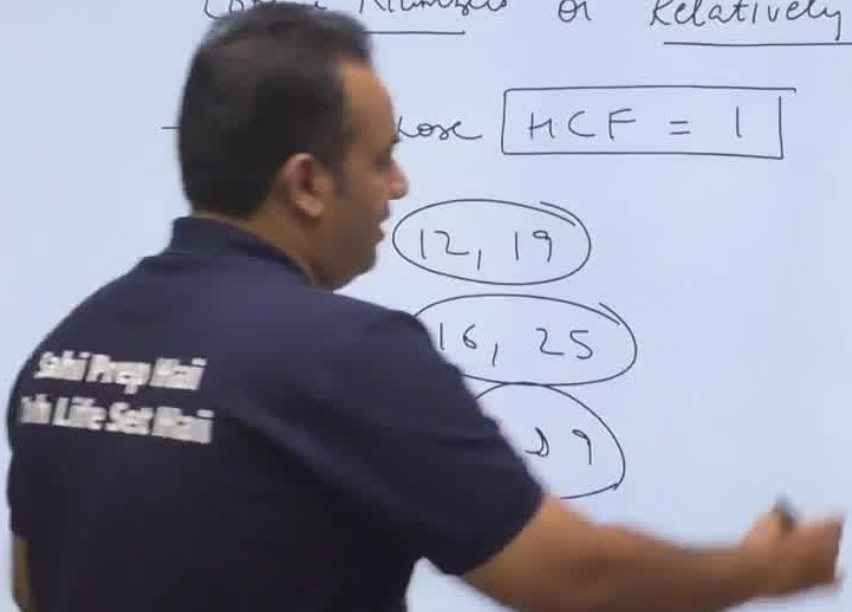
Co... Numbers or Relatively prime numbers

...ose HCF = 1

12, 19

16, 25

...9



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COPRIME NUMBERS

Coprime Numbers or Relatively prime numbers

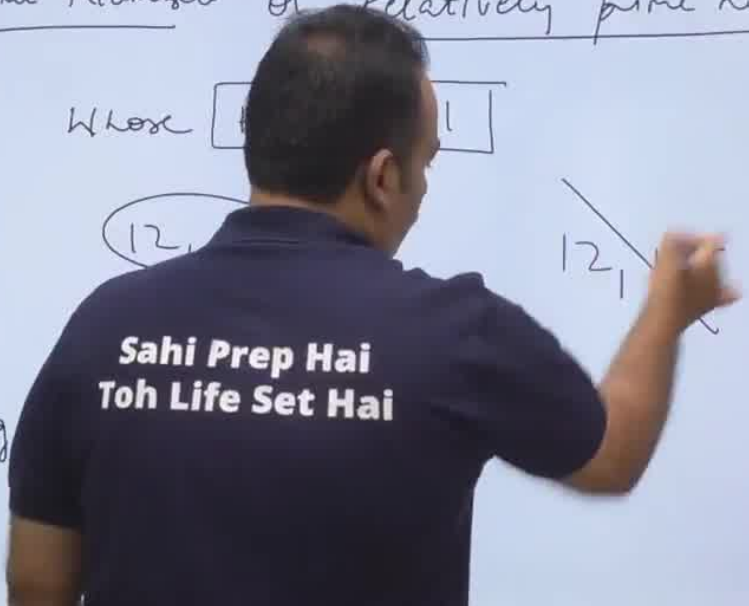
→ Whose [ ] 1

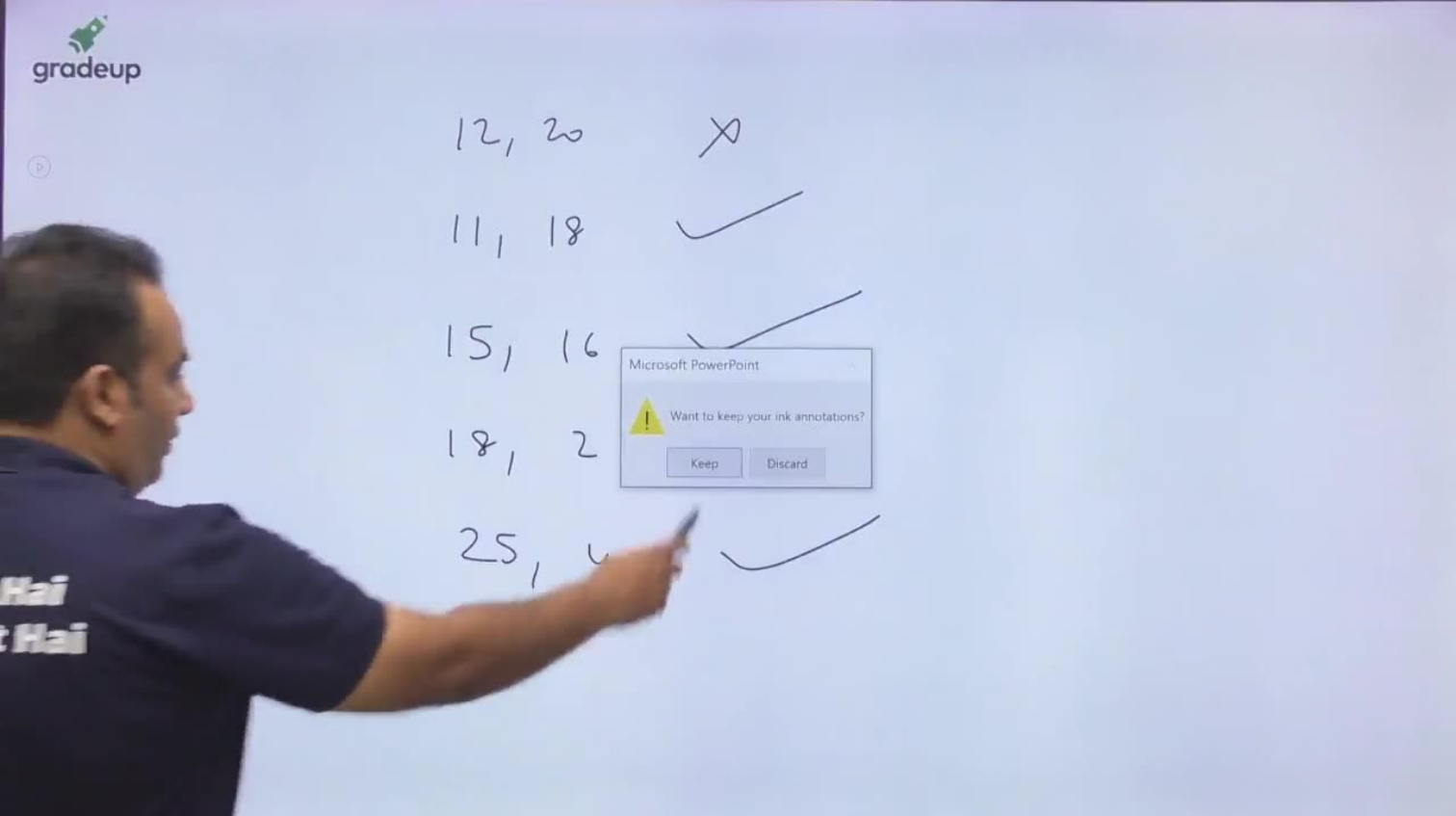
eg 12,

eg

eg

12, 1

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12, 20
11, 18
15, 16
18, 2
25,
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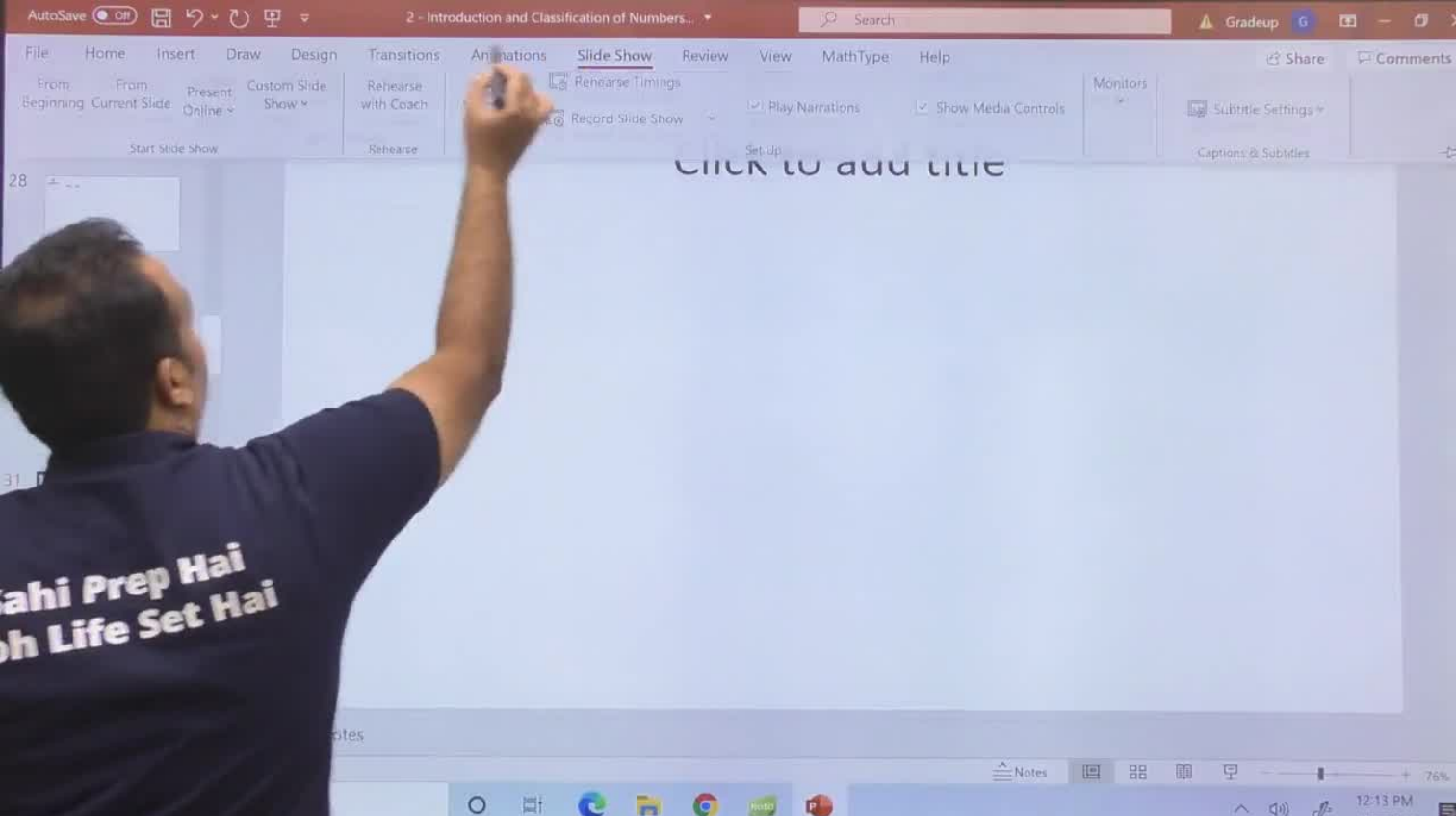
Keep
Discard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2 - Introduction and Classification of Numbers...
Search
Gradeup
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Draw
Design
Transitions
Animations
Slide Show
Review
View
MathType
Help
Share
Comments
From Beginning
From Current Slide
Present Online
Custom Slide Show
Start Slide Show
Rehearse with Coach
Rehearse
Rehearse Timings
Record Slide Show
Play Narrations
Show Media Controls
Set Up
Monitors
Subtitle Settings
Captions & Subtitles
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Notes
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Which of these statement

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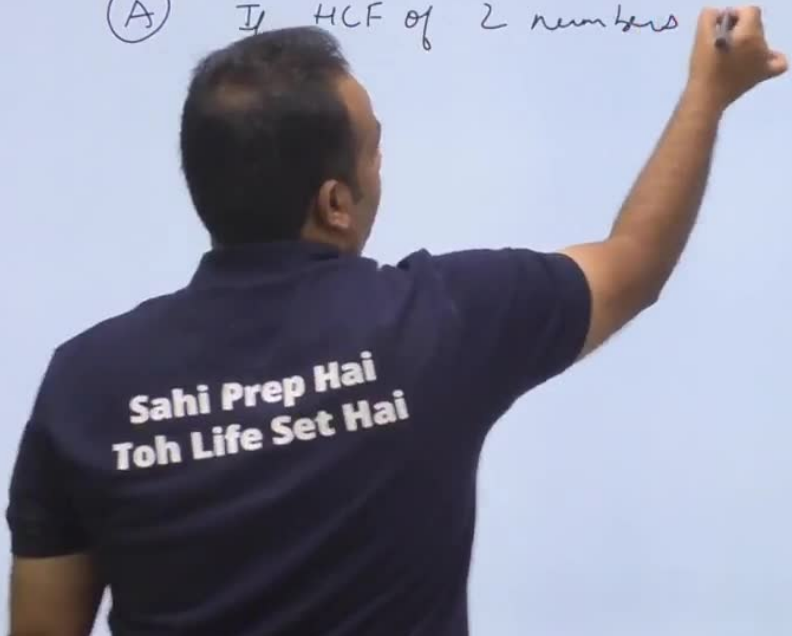
Which of these statements is/are true

(A) If HCF of 2 numbers



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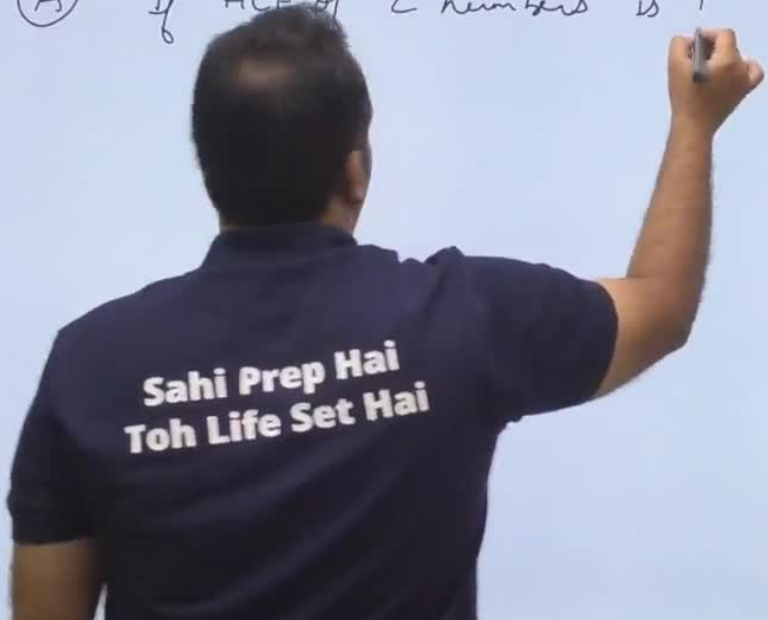
Which of these statements is/are true

(A) If HCF of 2 numbers is 1



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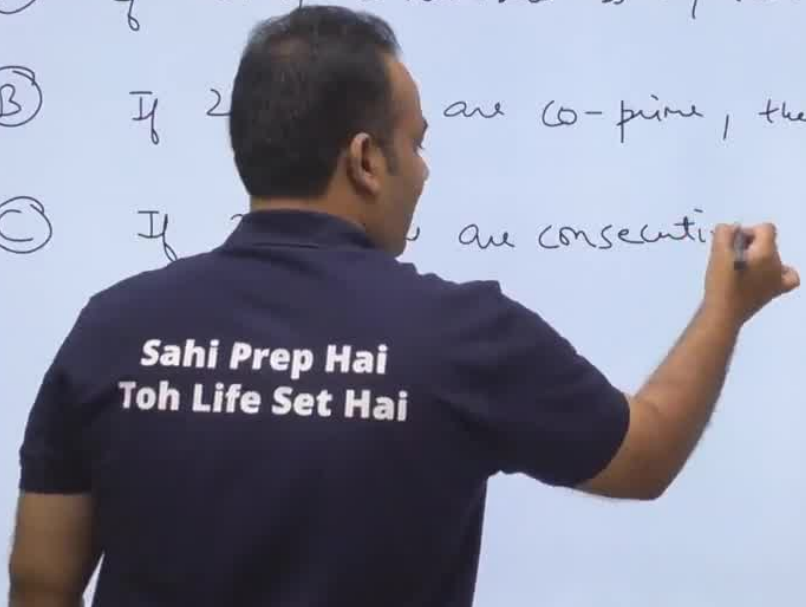
Which of these statements is/are true

(A) If HCF of 2 numbers is 1, then they are coprime

(B) If 2 [illegible] are co-prime, then their HCF = 1

(C) If [illegible] are consecuti[illegible]



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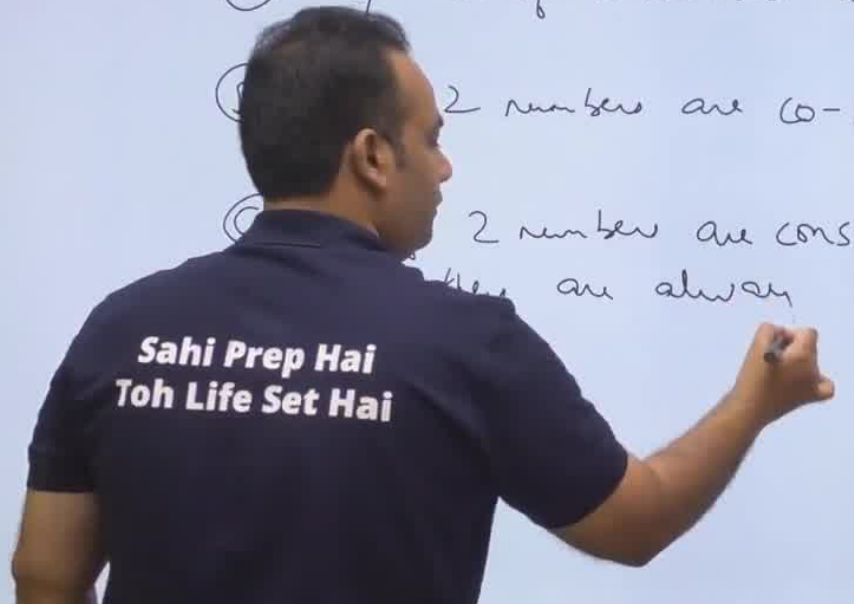
Which of these statements is/are true

(A) If HCF of 2 numbers is 1, then they are coprime

( ) 2 numbers are co-prime, then their HCF = 1

( ) 2 numbers are consecutive natural numbers, ... are always



gradeup

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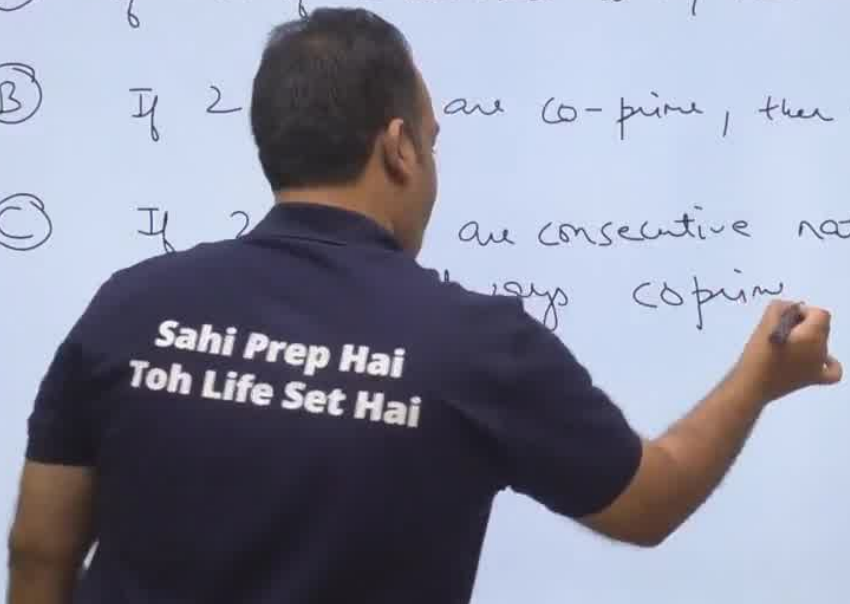

gradeup

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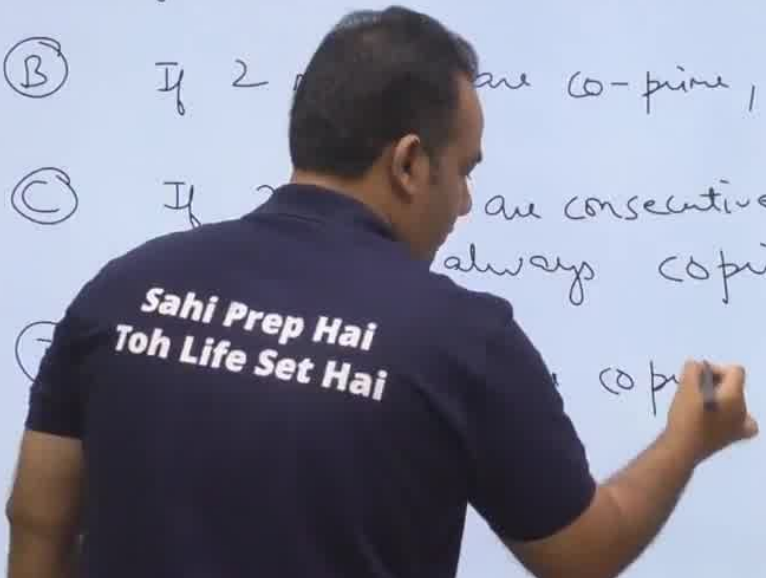
(C) If [illegible] are consecutive natural numbers, [illegible] always coprime

(D) [illegible] co[illegible]



gradeup

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(B) ...bers are co-prime, then their HCF = 1

(C) ...bers are consecutive natural numbers, ...are always ...me

...are coprime, then they are ...ays consecutive.

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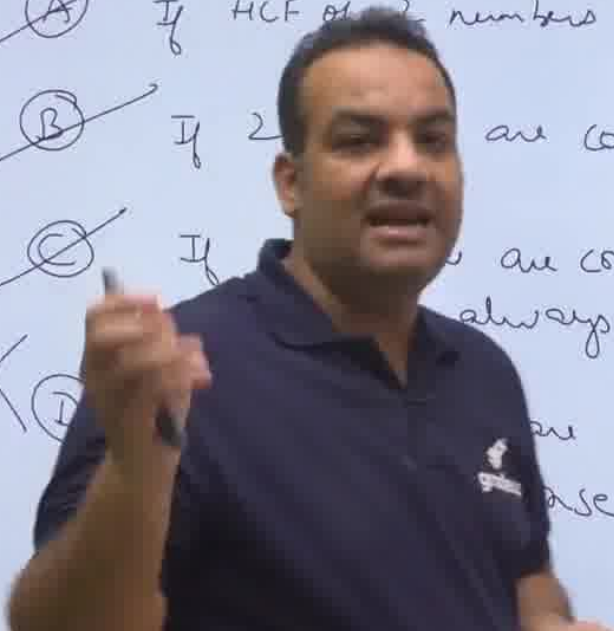
(A) If HCF of 2 numbers is 1, then they are coprime

(B) If 2 are co-prime, then then HCF = 1

(C) If are consecutive natural numbers, always coprime

(D) are coprime, then they are consecutive



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Eg. Three numbers which are co-prime to each other, are such that the product of the first two is 286 and that of the last two is 770. What is the sum of the three numbers?

(a) 85 (b) 80

(c) 75 (d) 70

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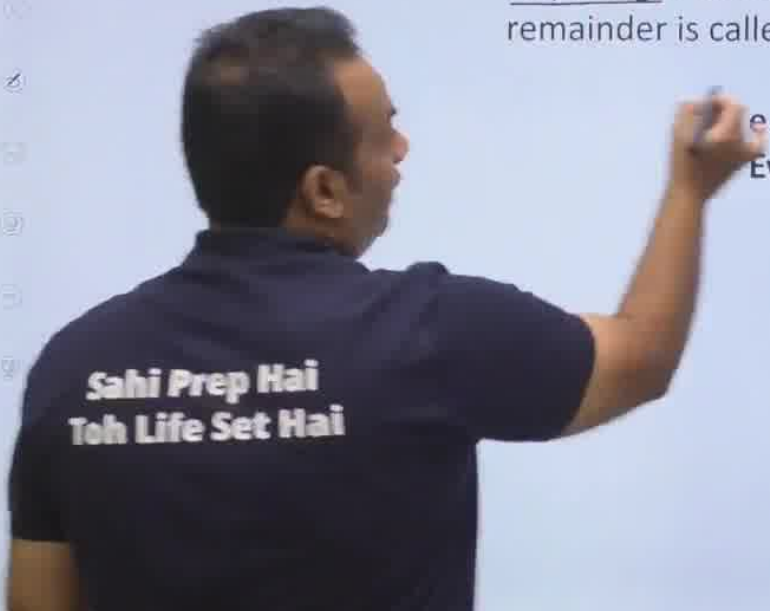
Even and Odd Numbers :

Even Numbers :

Any integer which on division by 2 gives zero (0) as the remainder is called as an even number .

e.g. 0, 2, 4, 6, 8,.....

Even no can be expressed as 2n



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Odd Numbers :

Any integer which on division by 2 gives 1 as the remainder is called as an odd number .

e.g. 1, 3, 5, 7,.....

Odd no can be expressed as **2n±1**

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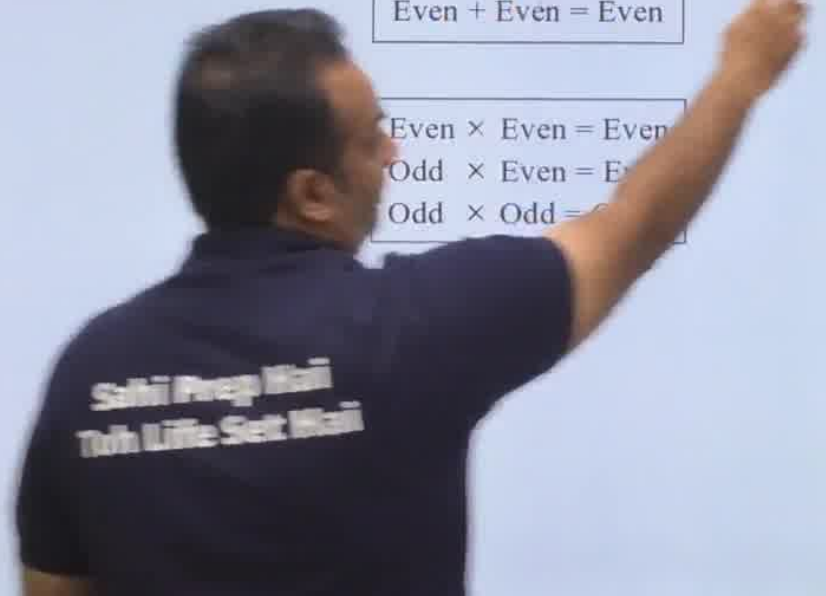
I Odd & Even Numbers

Odd + Odd = Even
Odd + Even = Odd
Even + Even = Even

Odd - Even = Odd
Even - Odd = Odd
Odd - Odd = Even
Even - Even = Even

Even × Even = Even
Odd × Even = E
Odd × Odd =

$(\text{Even})^{\text{Any Natural No.}} = \text{Even}$
$(\text{Odd})^{\text{Any Natural No.}} = \text{Odd}$



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Odd = 0

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Odd = 0 , Ev

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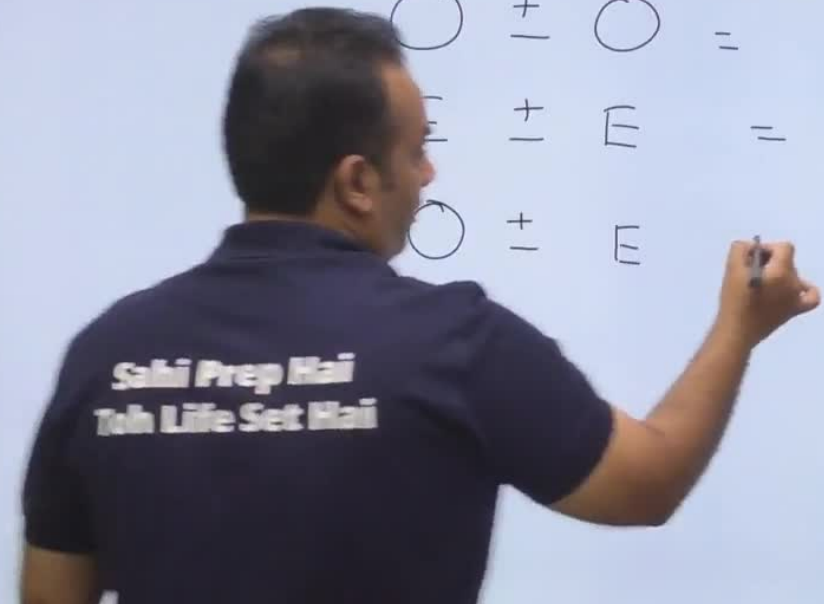
Odd = O , Even = E

O ± O = E

E ± E = E

O ± E



Odd = O , Even = E

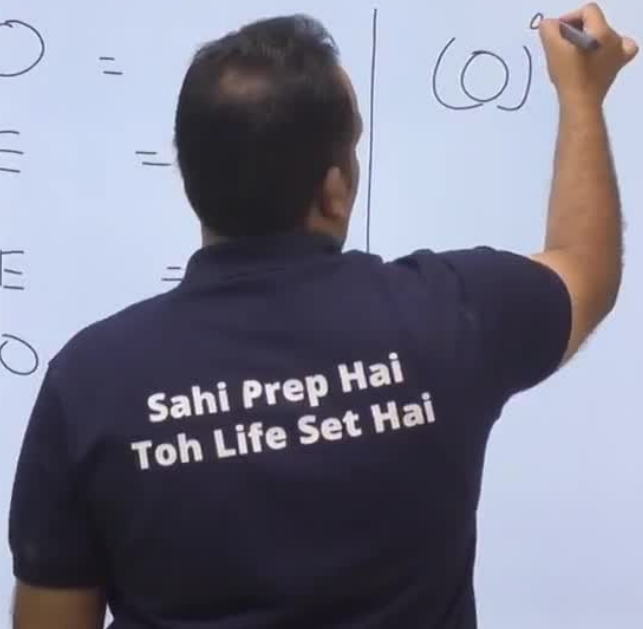
O ± O =

E ± E =

O ± E =

E ± O

(O)



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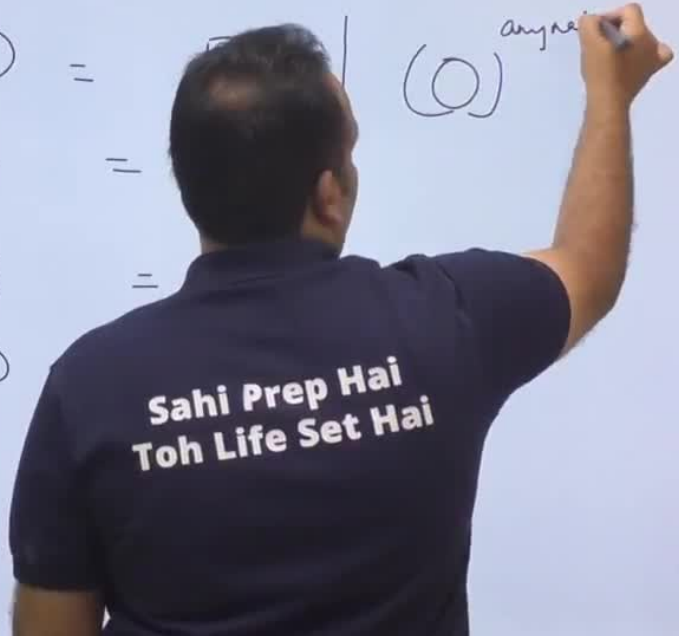
Odd = O , Even = E

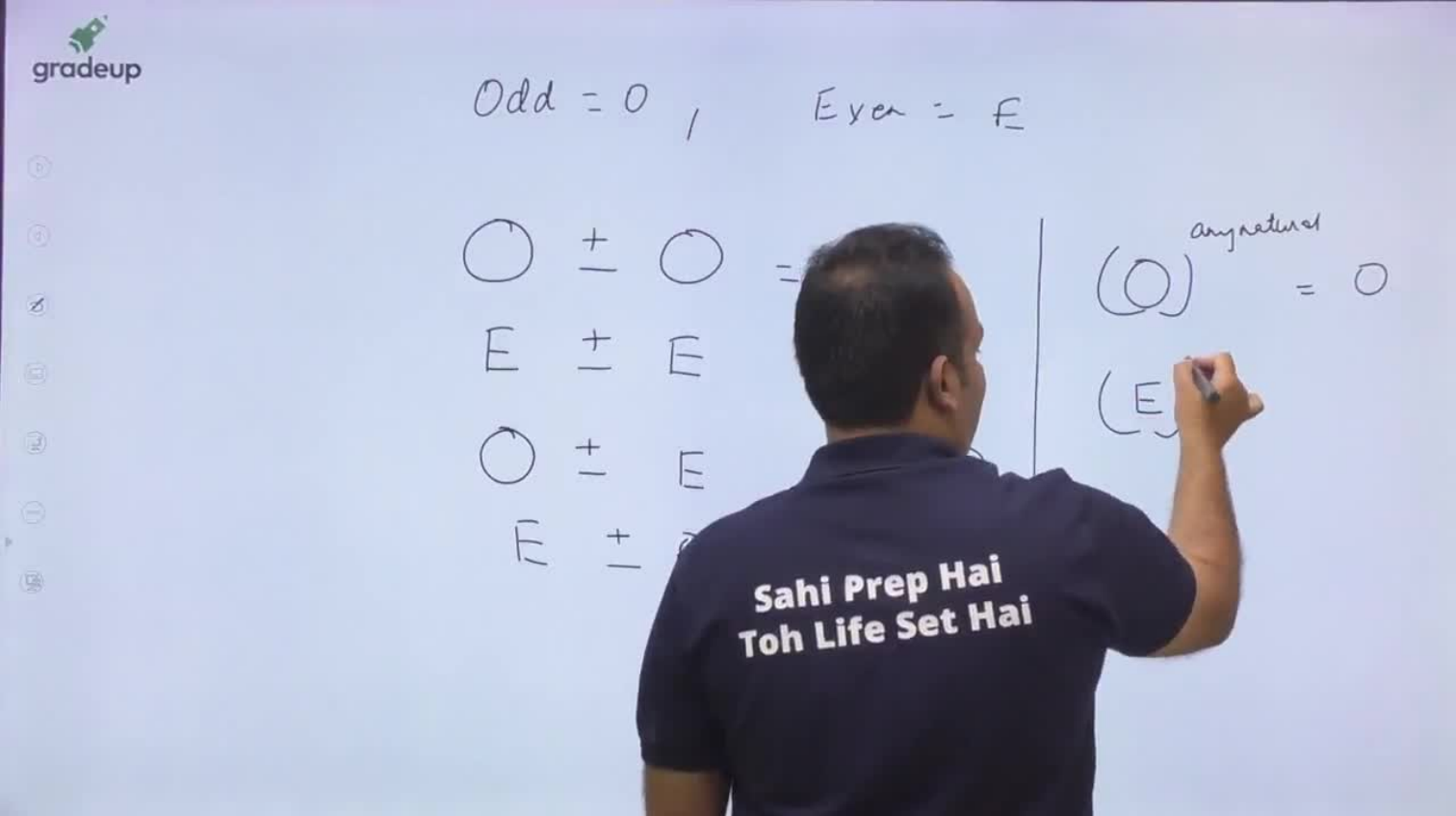
O ± O = E | (O) anyone

E ± E = E

O ± E = O

E ± O = O

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Odd = O , Even = E
O ± O =
E ± E
O ± E
E ±
(O)^any natural = O
(E
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Odd = O , Even = E

O ± O = E

E ± E = E

O ± E = O

E ± O = O

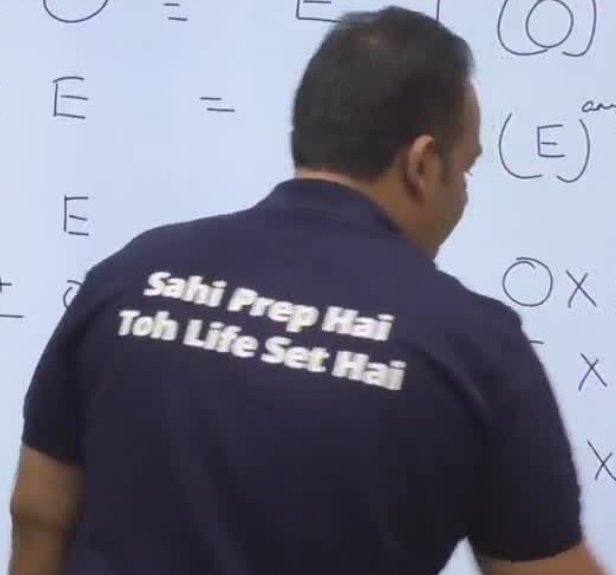
(O)^{any natural} = O

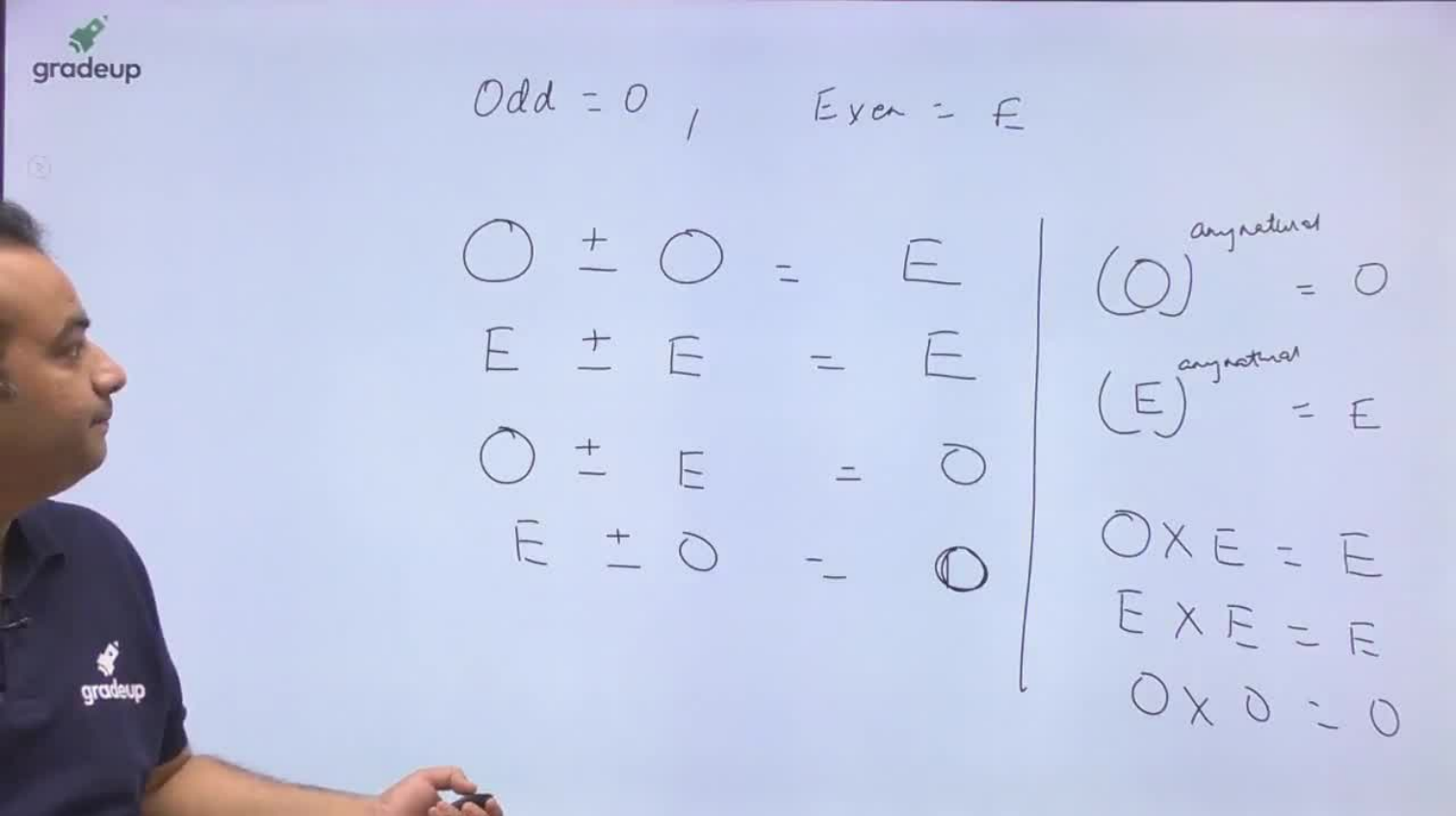
(E)^{any natural} = E

O × E = E

E × E = E

E × O = O

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Odd = O , Even = E
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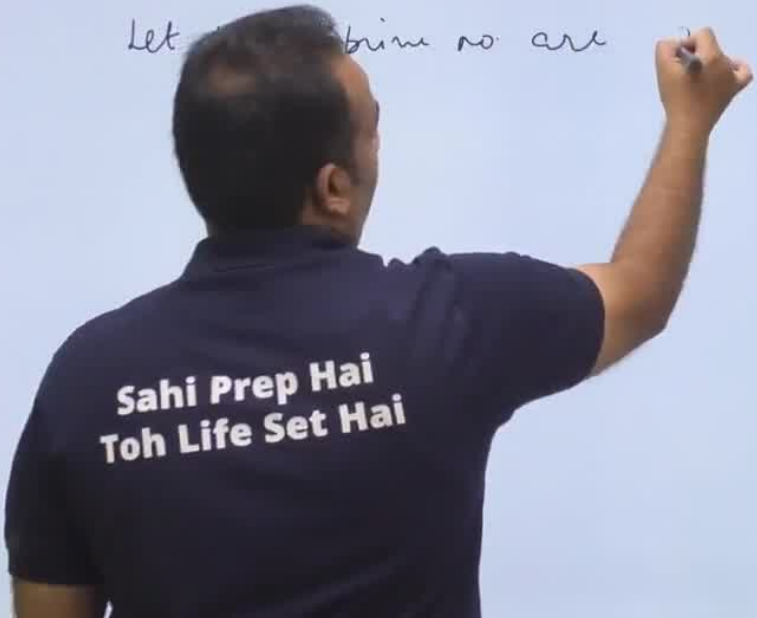
O ± E = O
E ± O = O
(O)^any natural = O
(E)^any natural = E
O x E = E
E x E = E
O x O = O
gradeup

gradeup

Eg. The sum of 3 prime numbers is 100. One number is greater than another number by 36. Find the numbers.

Let [illegible] prime no are [illegible]



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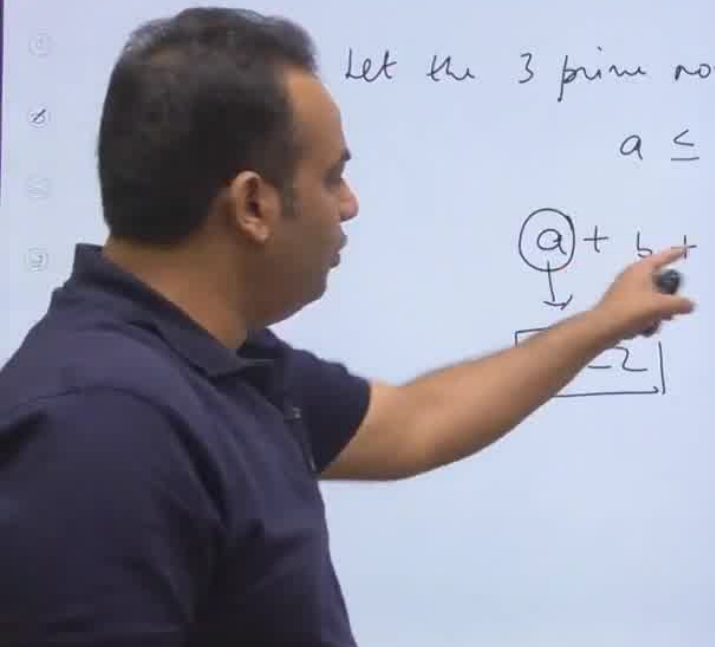

Let the 3 prime no are a, b, c

$a \leq b, \leq c$

$a + b + c = 100$

$a = 2$

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Eg. The sum of 3 prime numbers is 100. One number is greater than another number by 36. Find the numbers.

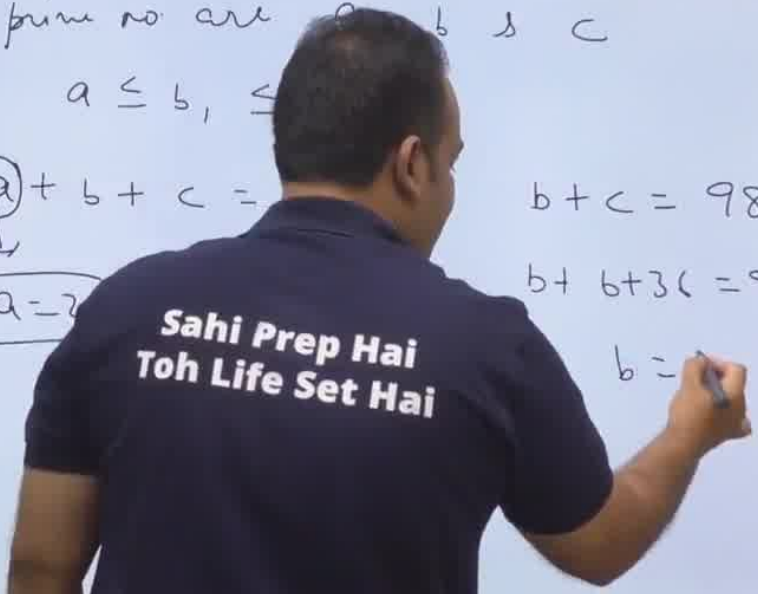
Let the 3 prime no are a, b & c

$a \leq b, \leq$

$a + b + c =$ $\quad b + c = 98$

$a =$ $\quad b + b + 36 = 98$

$b =$



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Eg. The sum of 3 prime numbers is 100. One number is greater than another number by 36. Find the numbers.

Let the 3 prime no are a, b & c

$\leq b, \leq c$

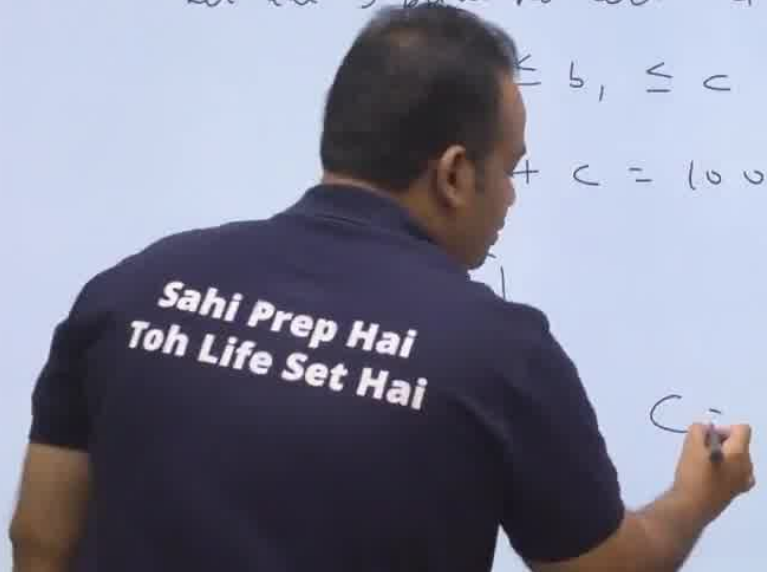
$+ c = 100$

$b + c = 98$

$b + b + 36 = 98$

$b = 31$

$c =$



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Eg. The sum of 3 prime numbers is 100. One number is greater than another number by 36. Find the numbers.

Let the 3 prime no are a, b & c

$\leq c$

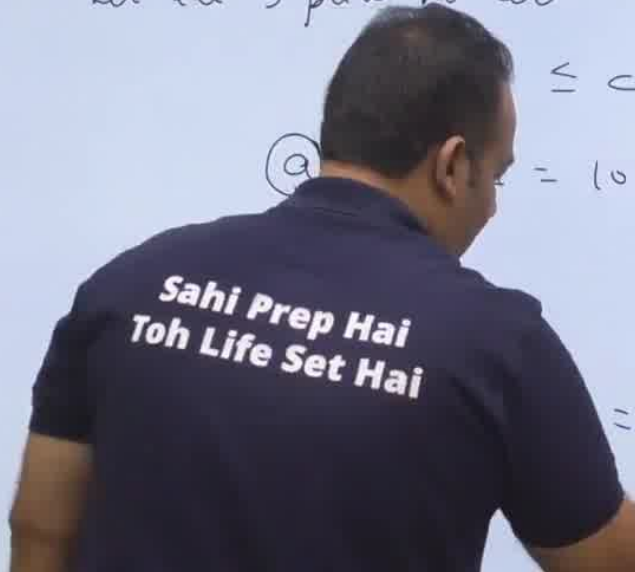
$= 100$

$b + c = 98$

$b + b + 36 = 98$

$b = 31$

$= 37$



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Eg. The sum of 3 prime numbers is 100. One number is greater than another number by 36. Find the numbers.

Let the 3 prime no are a, b, c

$a \leq b \leq c$

$a + b + c = 100$

$a = 2$

let $c = b + 36$

$b + c = 98$

$b + b + 36 = 98$

$b = 31$

$c = 67$

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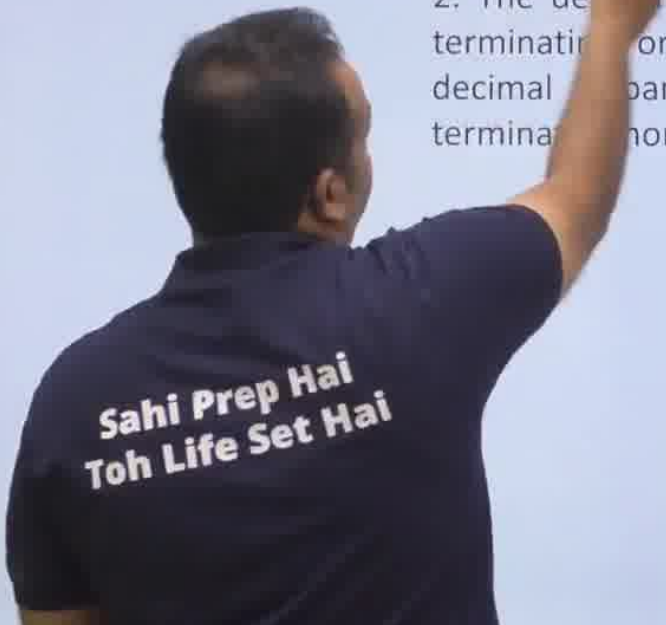
Difference between a Rational & an Irrational Number.

1. Definitio
2. The de l expansion of a Rational number is either terminati or non-terminating (repeating) whereas the decimal pansion of an irrational number is non-termina non-repeating



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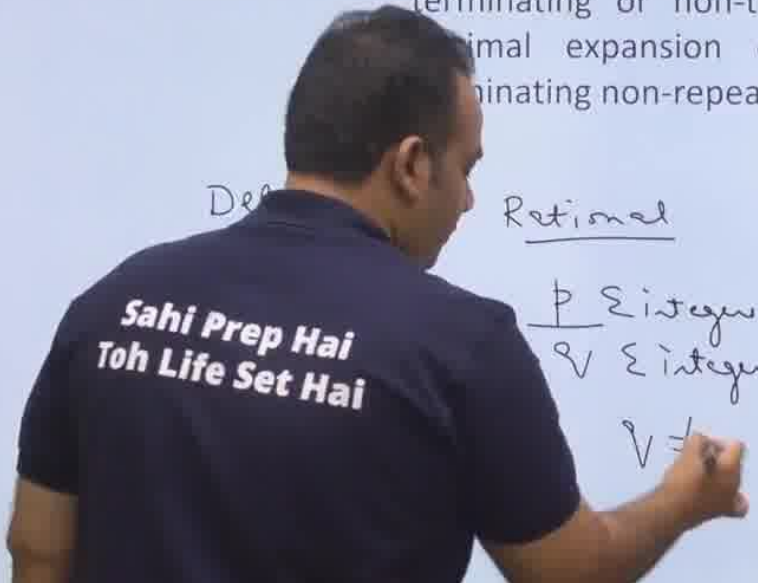

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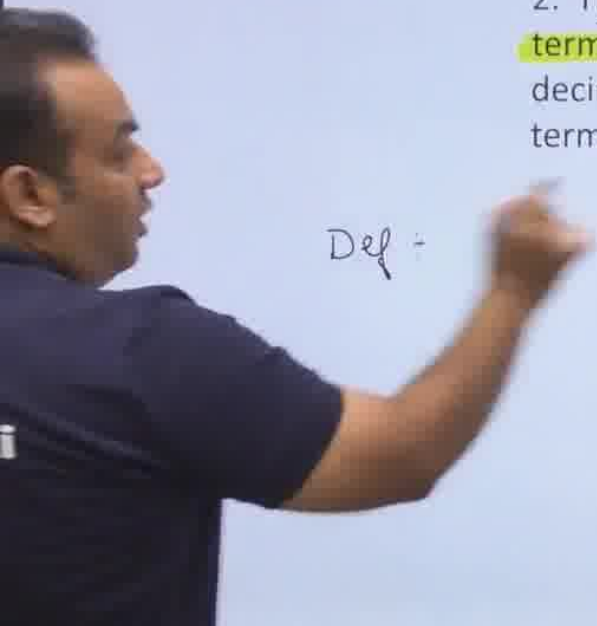

Def :-

Rational

$\frac{p}{q}$ $p \in$ Integer
$q \in$ Integer
$q \neq 0$

Irrational

$\frac{p}{q}$ ×

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Rational Number

- Terminating
  - $\frac{1}{2}$
- Non Terminating (Repeating)
  - $\frac{1}{3} = 0.3333..... = 0.\overline{3}$
  - $\frac{1}{6} = 0.1666666.... = 0.1\overline{6}$
  - $\frac{1}{9} = 0.1111111.... = 0.\overline{1}$
  - $\frac{1}{11} = 0.090909.... = 0.\overline{09}$
  - $\frac{1}{7} = 0.142857142857.... = 0.\overline{142857}$

umbers are non terminating & non repeating

....

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Rational Number

Terminating

$\frac{1}{2}=0.5$

0.25

Non Terminating (Repeating)

(Recurring)

$\frac{1}{3}=0.3333.....=0.\overline{3}$

$\frac{1}{6}=0.1666666....=0.1\overline{6}$

$\frac{1}{9}=0.1111111....=0.\overline{1}$

$\frac{1}{11}=0.090909....=0.\overline{09}$

$\frac{1}{7}=0.142857142857....=0.\overline{142857}$

onal numbers are non terminating & non repeating

g:-

3.14159.....

=1.414.....

1.732.....

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Rational Number

Terminating

$\frac{1}{2}=0.5$

Non Terminating (Repeating)

(Recurring)

$\frac{1}{3}=0.3333.....=0.\overline{3}$

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...mbers are non terminating & non repeating

.....

....

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Tell whether given no.

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Tell whether given no. are Rational or I

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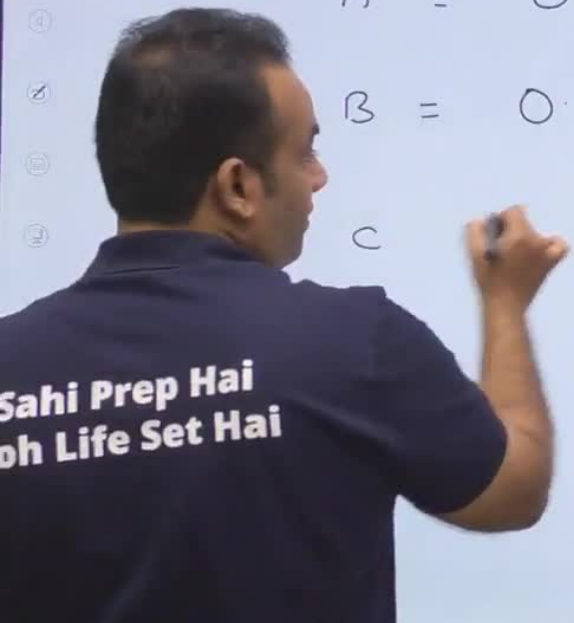
Tell whether given no. are Rational or Irrational

A = 0.5863

B = 0.31444444444

C



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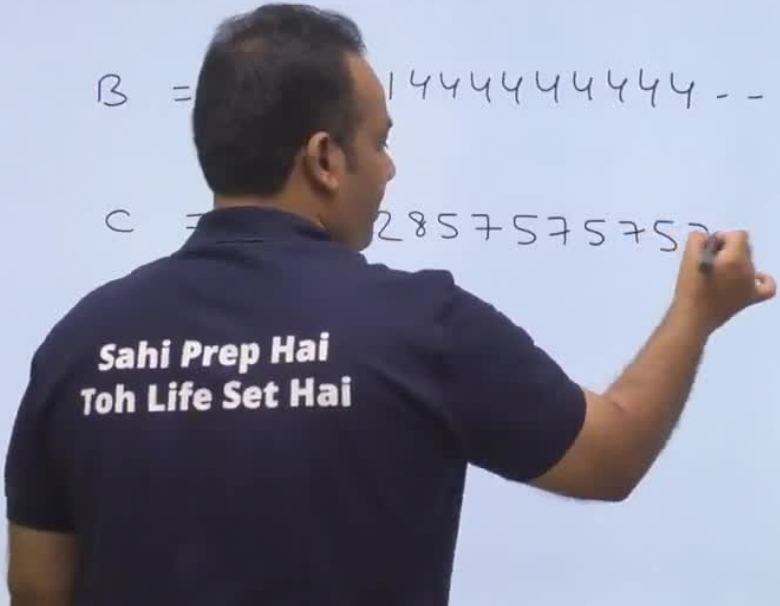
Tell whether given no. are Rational or Irrational

A = 0.5863

B = 1444444444 - - - - -

C = 2857575752...



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Tell whether given no. are Rational or Irrational

A = 0.5863

B = 0.3 [illegible] 444444 - - - - -

C = 0 [illegible] 575757 - - - -

[illegible] 002000200002 - - - - -

[illegible] 38798

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Tell whether given no are Rational or Irrational

A = 0.5863

B = 0.3144444444 - - -

C = 0.2857575 -

D = 0. 2 - - - - -

E = 5871

Tell whether given no. are Rational or Irrational

A = 0.5863

0.3144444…444 - - - - -

0.…5757 - - - -

…2002000200002 - - - - -

…518738798768758 71

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Tell whether given no. are Rational or Irrational

A = 0.5863 ⟶ Rational

B = 0.3 ... 4444 - - - -

C = 0. ... - - -

D = ... 200002 - - - - -

E ... 798768758 71

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Tell whether given no are Rational or Irrational

A = 0.5863 ⟶ Rational Number

0.31444444444.....

0.3144

0.285757...

0.2000200002.....

0.5187387987687587 1

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Tell whether given no are Rational or Irrational

A = 0.5863 ⟶ Rational Number

= 0.3144444444----

= $0.31\overline{4}$ ⟶ Rational number

= 0.2857575757---

= $0.28\overline{57}$ ⟶ Rational number

= 0.4020020002000002-----

5187387987687587 1

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Tell whether given no are Rational or Irrational

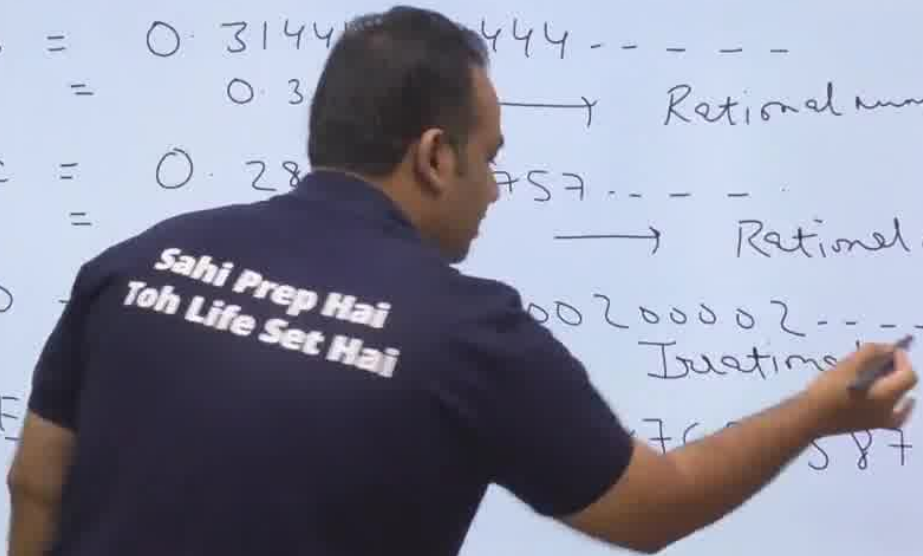
A = 0.5863 ⟶ Rational Number

B = 0.3144444----
= 0.3 ⟶ Rational number

C = 0.28757----
= ⟶ Rational number

D = 0.00200002----
Irrational

E = 0.5871



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Tell whether given no are Rational or Irrational

A = 0.5863 ⟶ Rational Number

B = 0.3144444444----
= $0.31\overline{4}$ ⟶ Rational number

C = 0.285757575----
= $0.28\overline{57}$ Rational number

D = 0.402002----
Irrational

E = 0.76875871

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How to check whether a Rational number is Terminating or Non-terminating ??

First check whether the rational number is in its simplest form or not . If it's not in its simplest form convert it into its simplest form .

Then do the prime factorization of the denominator and check denominator is made up of which primes

Case 1 : If its made by using 2 or 5 only then its terminating

Case 2 : If any prime is used other than 2 or 5 then its non – terminating .

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How to check whether a Rational number is Terminating or Non-terminating ??

First check whether the rational number is in its simplest form
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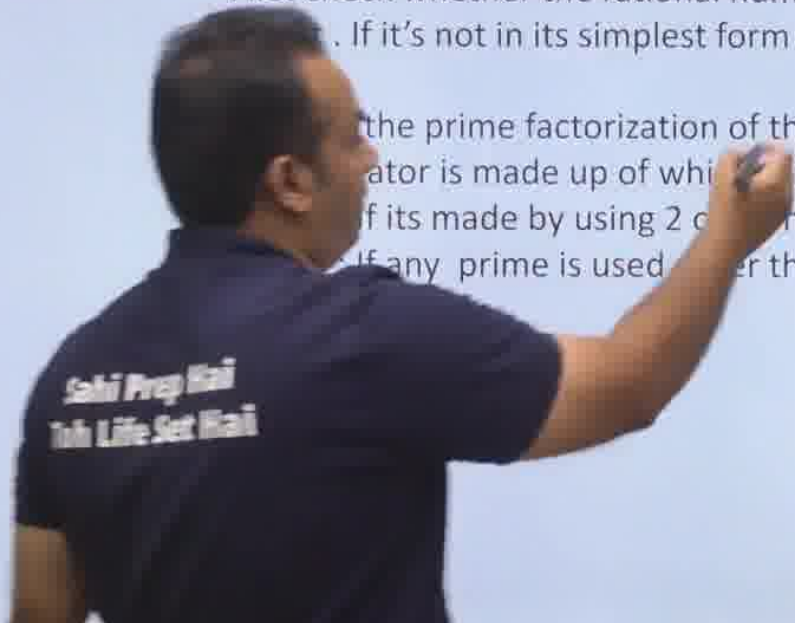
If any prime is used er than 2 or 5 then its non –



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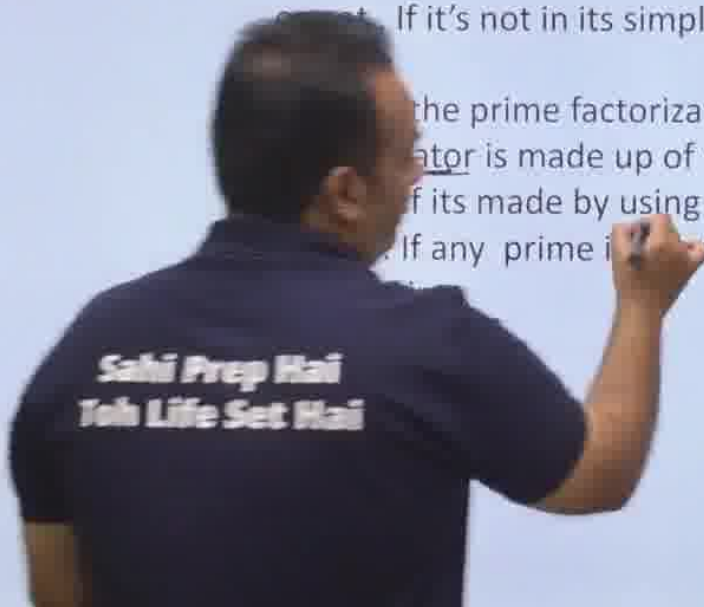

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Which of the following numbers are terminating decimals?

Terminating

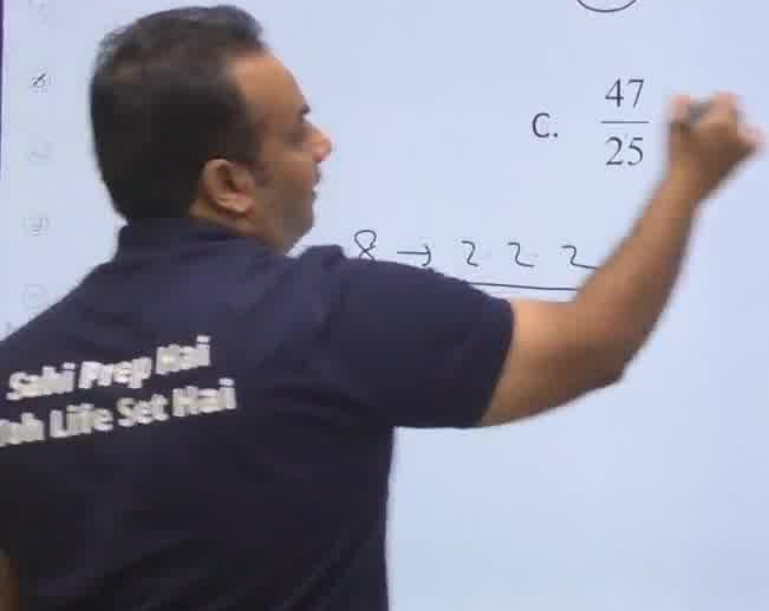
A. $\frac{23}{8}$

B. $\frac{37}{15}$

C. $\frac{47}{25}$

D. $\frac{69}{40}$

$8 \rightarrow 2\ 2\ 2$



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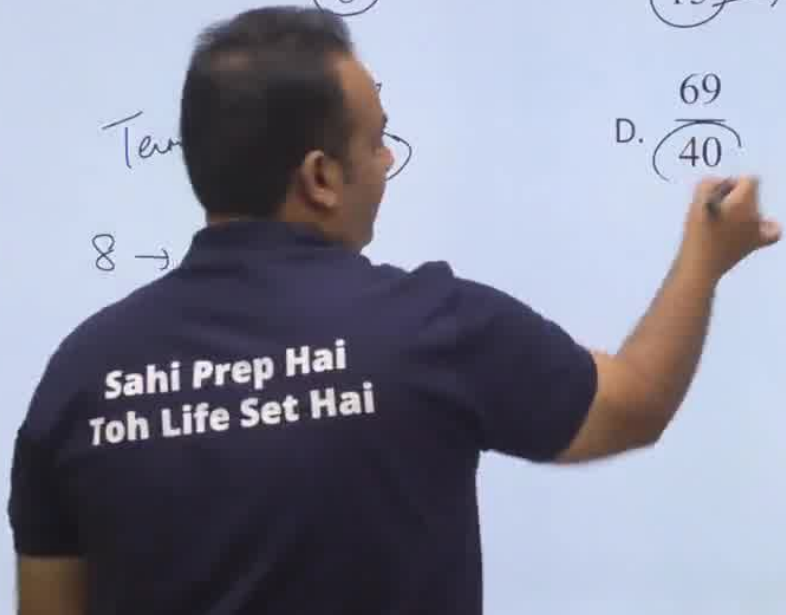

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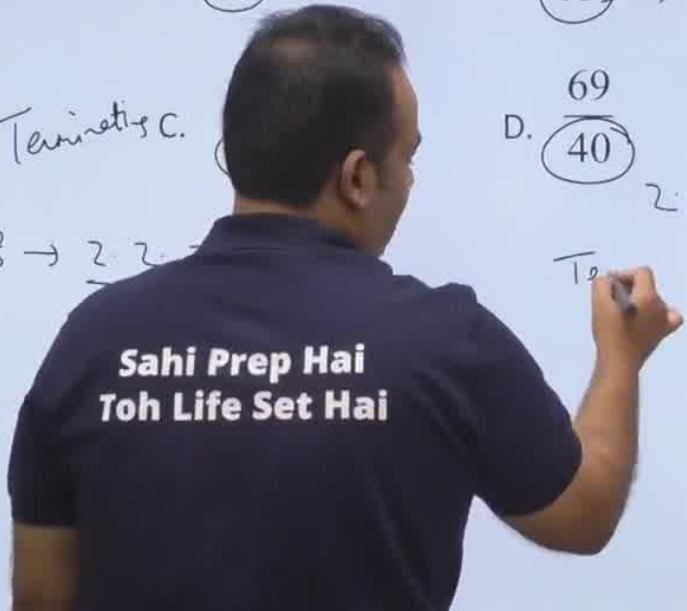
Terminating C.

D. $\frac{69}{40}$

$2 \cdot 2 \cdot 2 \cdot 5$

$8 \rightarrow 2 \cdot 2 \cdot$

T



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Conversion of a Recurring decimal in p/q form.

E.g. $X = 0.2353535.....$

$10X = 2.353535.....$ (1)

$100X = 23.53535.....$

$1000X = 235.3535.....$ (2)

Subtract (1) from (2)

$990X = 233$

$$X = \frac{233}{990}$$

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Eg.

$$A = 0.1\overline{23} = \frac{123-1}{990} = \frac{122}{990}$$

$$B = 0.12\overline{3} = \frac{123-12}{900} = \frac{111}{900}$$

$$C = 0.\overline{123} = \frac{123}{999}$$

$$D = 0.471\overline{23} = \frac{47123-471}{99000} = \frac{46652}{99000}$$

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Addition and Subtraction of Recurring Decimal

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Eg. $234.\overline{56} + 12.3\overline{235}$

I	II	III
234.5 12.3	656565 235235	65 23
246.8	891800	88

$246.8\overline{891800}$

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2. What is the sum of all prime numbers between 50 and 90?

(a) 485

(b) 572

(c) 722

(d) 635

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9. p, q and r are prime numbers such that $p < q < r < 13$. In how many cases would $(p + q + r)$ also be a prime number?

(a) 1
(b) 2
(c) 3
(d) None of these


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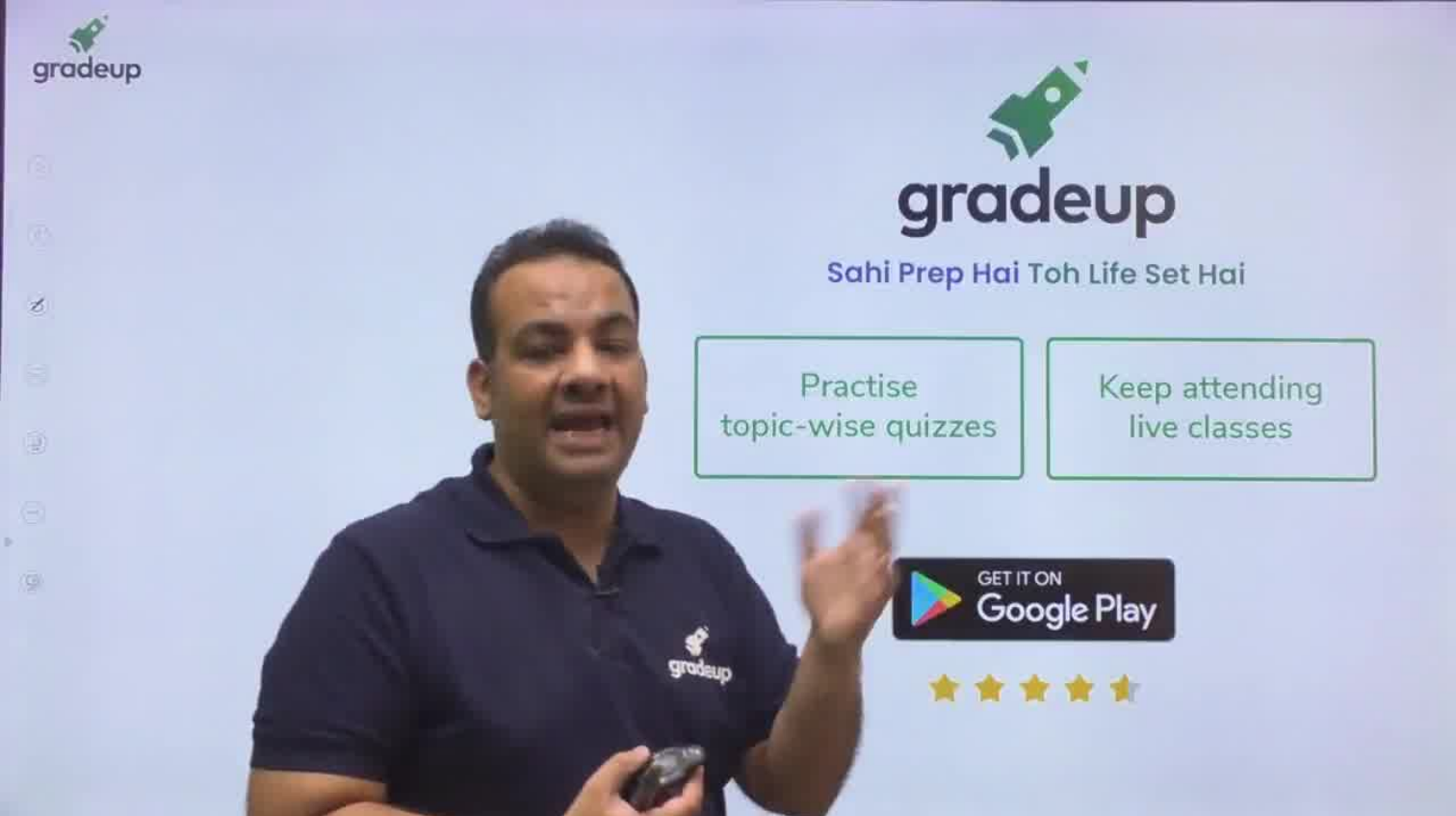
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