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Sahi Prep Hai Toh Life Set Hai

Doubt Session



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Doubt Session



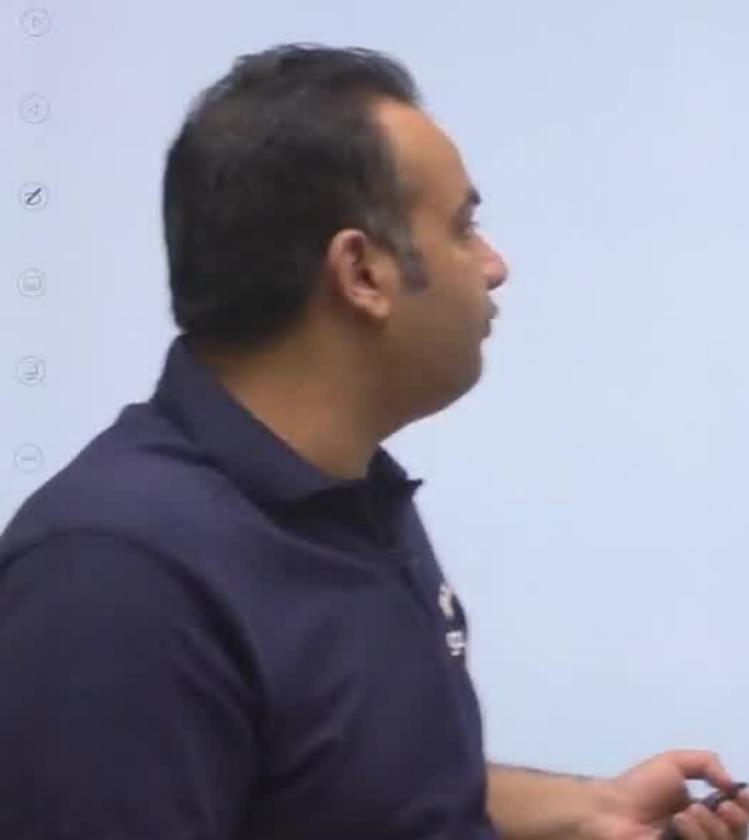


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INSTRUCTIONS FOR ATTACHING DOUBTS FOR FURTHER DOUBT SESSION

If a doubt is not attached properly, it will not be taken in the class.

None of the question which is discussed in class will be taken in doubt session, if you haven't revised the class.

Students can ask any number of questions and without mentioning which chapter, no doubts will be entertained.

As per our terms and conditions, a student can ask maximum numbers of doubts, a student can ask 5 doubts in a doubt session.

Please send all your doubts atleast 24 hours before the Doubt Class.

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INSTRUCTIONS FOR ATTACHING DOUBTS FOR FURTHER DOUBT SESSION

If doubt is not attached properly, it will not be entertained in the class.

For any question which is discussed in class, if you have not taken in doubt session, if you haven't attended the class.

Without options and without mentioning which one is correct, no doubts will be entertained.

For any numbers of doubts, a student can ask in a single session is 5.

So, attach all your doubts atleast 24 hours before the Doubt Class.

INSTRUCTIONS FOR ATTACHING DOUBTS FOR FURTHER DOUBT SESSION

Text me
on Telegram

9971058659

If a doubt is not attached properly, it will not taken in the class.

None of the question which is discussed in class will be taken in doubt session, if you haven't revised the class.

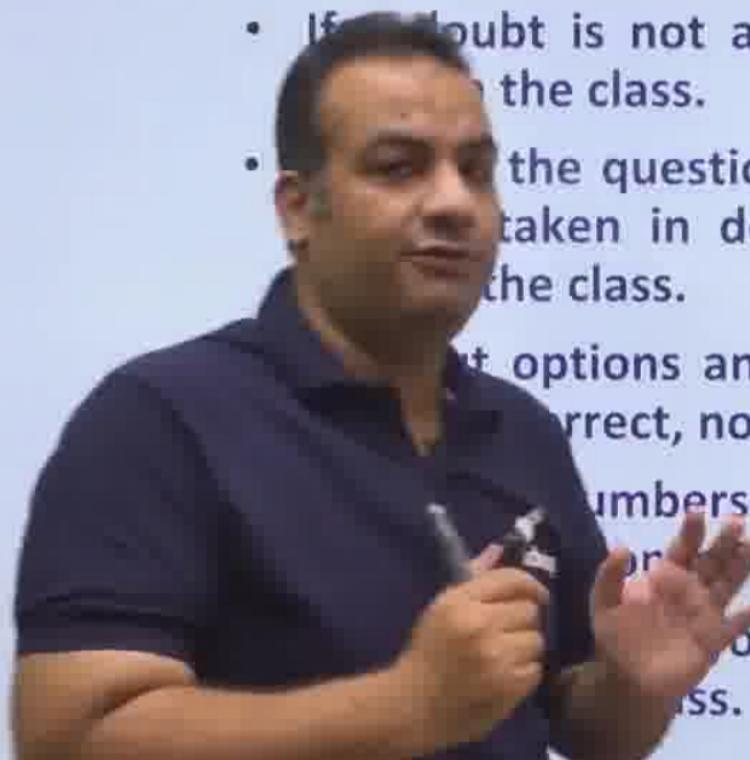
With multiple questions and without mentioning which is correct, no doubts will be entertained.

With multiple numbers of doubts, a student can ask only 5.

Attach your doubts atleast 24 hours before the class.

INSTRUCTIONS FOR ATTACHING DOUBTS FOR FURTHER DOUBT SESSION

- If doubt is not attached properly, it will not be entertained.
- Attach the question which is discussed in class or the question taken in doubt session, if you haven't mentioned the question, it will not be entertained.
- Without options and without mentioning which option is correct, no doubts will be entertained.
- In a single video, a student can ask only a limited numbers of doubts, a student can ask more than one doubt in a single video.
- Attach your doubts atleast 24 hours before the start of the class.



36. The sum of the digits of a number N is 23.
The remainder when N is divided by 11 is
7. What is the remainder when N is
divided by 33?

किसी संख्या N के अंको का योग 23 है।

N को 11 से विभाजित करने पर शेषफल
7 बचता है। जब N को 33 से विभाजित
किया जाता है तो शेषफल क्या बचता है?

- a) 7 b) 29 c) 16 d) 13



Harshit

$$N = ?$$

Sum of the digits is 23

$$\Sigma = ?$$

$$R = ?$$

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36. The sum of the digits of a number N is 23. The remainder when N is divided by 11 is 7. What is the remainder when N is divided by 33?

किसी संख्या N के अंको का योग 23 है। N को 11 से विभाजित करने पर शेषफल 7 बचता है। जब N को 33 से विभाजित किया जाता है तो शेषफल क्या बचता है?

- a) 7 b) 29 c) 16 d) 13

$$N = ?$$

Sum of the digits is 23

$$\frac{N}{11}$$

$$R = 7$$

$$\frac{N}{3}$$

$$R = 2$$

$$\frac{N}{33} = ?$$

$$\frac{29 + 33m}{33}$$

36. The sum of the digits of a number N is 23.
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किसी संख्या N के अंको का योग 23 है। N को 11 से विभाजित करने पर शेषफल 7 बचता है। जब N को 33 से विभाजित किया जाता है तो शेषफल क्या बचता है?

- a) 7 b) 29 c) 16 d) 13

$$11x + 7 = 3y + 2$$

$$\begin{aligned} Y &= \frac{11x + 5}{3} \\ &= \underline{\underline{9x + (2x + 5)}} \end{aligned}$$

$$\begin{array}{r} N \\ \hline 3 \\ R = 2 \end{array}$$

$$\begin{array}{r} N \\ \hline 11 \\ R = 7 \end{array}$$

$$\begin{aligned} 3x + 2 &= (11y + 7) \\ x &= \frac{11y + 5}{3} \\ &= \underline{\underline{9y + (2y + 5)}} \end{aligned}$$

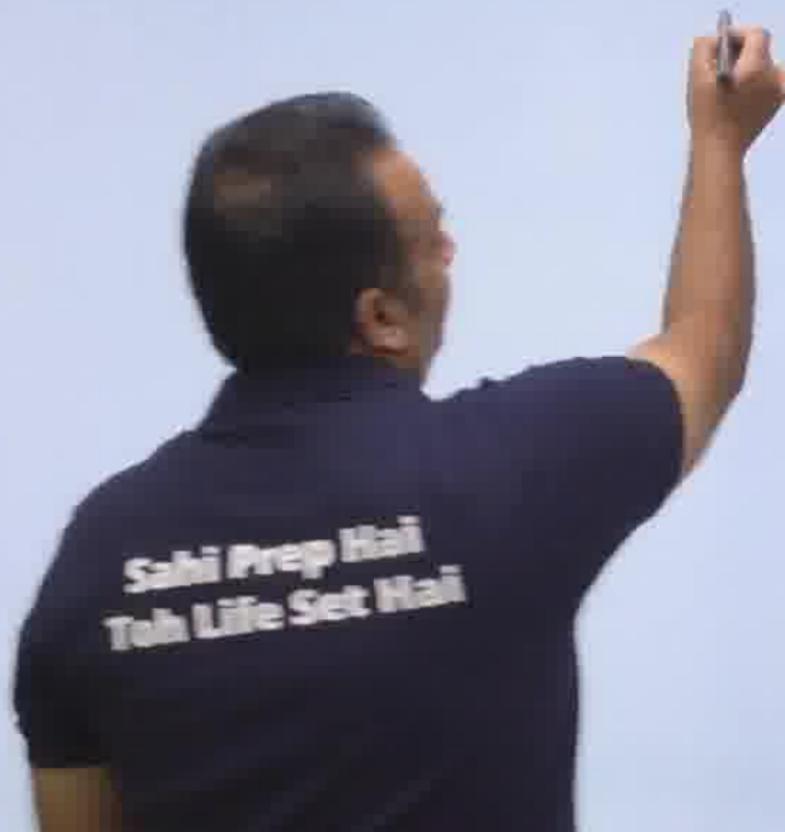
$$\begin{array}{r} 29 + 32m \\ \hline 33 \end{array}$$

36. The sum of the digits of a number N is 23.
 The remainder when N is divided by 11 is 7. What is the remainder when N is divided by 33?

किसी संख्या N के अंको का योग 23 है।
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 a) 7 b) 29 c) 16 d) 13

Find the number of zeroes.

Q. $1 \times 3 \times 4 \times 5 \times 6 \times \dots \times 999 \times 128$



Ritik Gupta

Find the number of zeroes.

(Misprinting) Q. $1 \times 3 \times 4 \times 5 \times 6 \times \dots \times 999 \times 128$

Please check the

$$1 \cdot 3 \cdot 5 \cdot \dots \cdot 999 \times 128$$

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Ritik Gupta

Find the number of zeroes.

(Misprint) Q. $1 \times 3 \times 4 \times 5 \times 6 \times \dots \times 999 \times 128$

Please check

$$1 \cdot 3 \cdot \dots \cdot 999 \times 128$$

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Ritik Gupta

Find the number of zeroes.

(Misprinting) Q. $1 \times 3 \times 4 \times 5 \times 6 \times \dots \times 999 \times 128$

Please check

$$1 \cdot 3 \cdot 5 \cdots 999 \times 128$$

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$\underline{\underline{2^7}}$

Ritik Gupta

Q. $64x29y6$ is divisible by 72, find x,y

Q. How many 5 digit no. Of the form $XXYXX$ is divisible by 33



Q. How many 5 digit no. Of the form XXYXX is divisible by 33

$$\begin{array}{cccc} & \times & \times & \times \\ & \curvearrowleft & \curvearrowright & \curvearrowleft \\ \times & x & y & x \\ & \curvearrowright & \curvearrowleft & \curvearrowright \\ & (x+y+x) & - & \end{array}$$

33

11 4

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Q. How many 5 digit no. Of the form XXYXX is divisible by 33

33

+x) - (x+

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Q. How many 5 digit no. Of the form $XXYXX$ is divisible by 33

$XXYXX$

$$(x+y+x) - (x+x) \text{ div by } 11$$

$$Y = 0$$

$\{ XX0XX$

$$\begin{aligned} & 4x \text{ div by } 3 \\ & x \rightarrow 3, 6, 9 \end{aligned}$$

33

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Q. How many 5 digit no. Of the form $XXYXX$ is divisible by 33

$$\begin{array}{|c|} \hline 33 \\ \hline \end{array} \rightarrow \boxed{11 \text{ & } 3}$$

div by 3

$$\begin{array}{cccc} X & X & Y & X \\ \diagdown & \diagup & & \\ (X+Y+X) & & & \end{array}$$

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3 values

$+x)$ div by 11

any natural no

$$\begin{array}{r} 10 \\ \hline 6 \\ \text{Rem} = 4 \end{array}$$

Q.5

Find the remainder of:

$$\frac{10^{5^7} + 10^{17^{18}} + 10^{35!} + 10^{29}}{6}$$

A 1

B 4

C 0

D 5

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Rohit

any natural no

$$\begin{array}{r} 10 \\ \hline 6 \\ \text{Rem} = 4 \end{array}$$

Q.5

Find the remainder of:

$$\frac{10^{5^7} + 10^{17^{18}} + 10^{35!} + 10^{29}}{6}$$

A 1

B 4

C 0

D 5

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Rohit

111.

It is being given that $(2^{32} + 1)$ is completely divisible by a whole number. Which of the following numbers is completely divisible by this number?

(a) $(2^{16} + 1)$

(b) $(2^{16} - 1)$

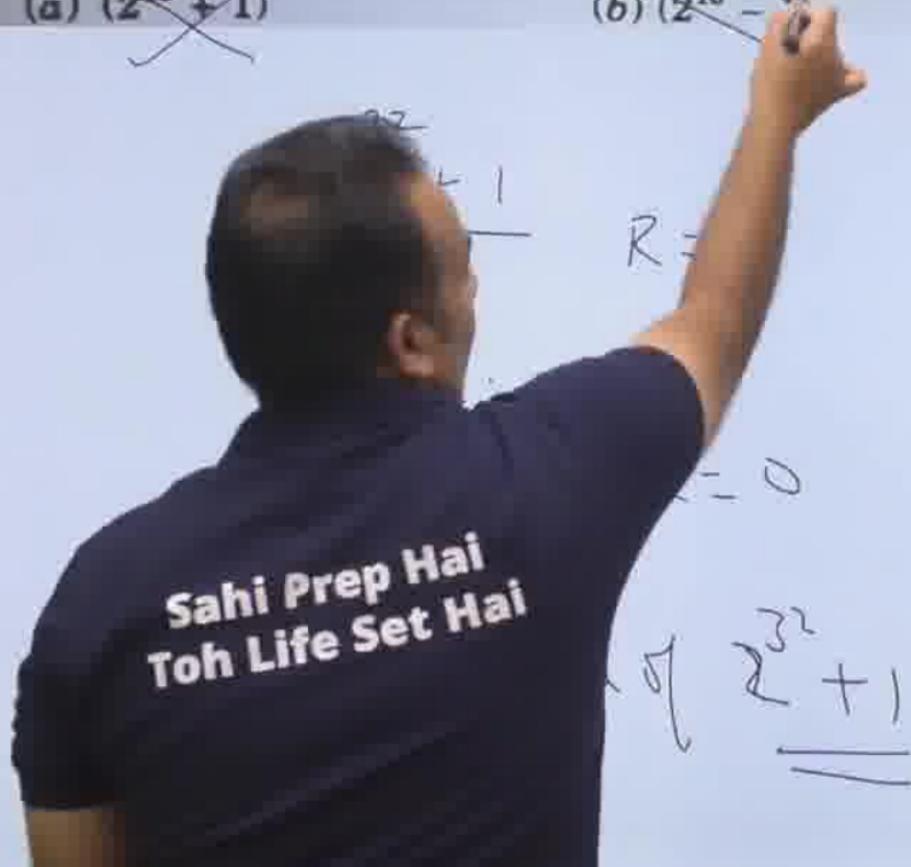
(c) 7×2^{33}

(d) $(2^{33} - 1)$



Ganesh

111. It is being given that $(2^{32} + 1)$ is completely divisible by a whole number. Which of the following numbers is completely divisible by this number?
- (a) $(2^{16} + 1)$ (b) $(2^{16} - 1)$ (c) 7×2^{33} (d) $(2^{30} + 1)$



Ganesh

111.

It is being given that $(2^{32} + 1)$ is completely divisible by a whole number. Which of the following numbers is completely divisible by this number?

(a) $(2^{16} + 1)$

(b) $(2^{16} - 1)$

(c) 7×2^{33}

(d) $(2^{33} + 1)$

$$\begin{array}{r} 2^{32} \\ + 1 \\ \hline N \end{array}$$

X

X is

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Ganesh

111.

It is being given that $(2^{32} + 1)$ is completely divisible by a whole number. Which of the following numbers is completely divisible by this number?

(a) $(2^{16} + 1)$

(b) $(2^{16} - 1)$

(c) 7×2^{33}

(d) $(2^{33} + 1)$

$$\begin{array}{r} 2^{32} \\ + 1 \\ \hline N \end{array}$$

N

X

$$\begin{array}{r} 2^{32} \\ + 1 \\ \hline \end{array}$$

X is

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Ganesh

111. It is being given that $(2^{32} + 1)$ is completely divisible by a whole number. Which of the following numbers is completely divisible by this number?
- (a) $(2^{16} + 1)$ (b) $(2^{16} - 1)$ (c) 7×2^{33} (d) $18^{20} - 1$

$$\begin{array}{r} 2^{32} \\ + 1 \\ \hline N \end{array}$$

\times

$$\begin{array}{r} 2^{32} \\ + 1 \\ \hline a + 1 \end{array}$$

$$2^{96}$$

X is

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Ganesh

111.

It is being given that $(2^{32} + 1)$ is completely divisible by a whole number. Which of the following numbers is completely divisible by this number?

(a) $(2^{16} + 1)$

(b) $(2^{16} - 1)$

(c) 7×2^{33}

(d) $(2^{33} + 1)$

$$\frac{2^{32} + 1}{N}$$

$R = 0$

$$\frac{X}{N}$$

$$\frac{2^{32} + 1}{a + 1}$$

$$2^{96} + 1 = (2^{32})^3 + 1$$

X is a multiple of 3

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Ganesh

111. It is being given that $(2^{32} + 1)$ is completely divisible by a whole number. Which of the following numbers is completely divisible by this number?
- (a) $(2^{16} + 1)$ (b) $(2^{16} - 1)$ (c) 7×2^{33} (d) $(2^{32} - 1)$

$$\frac{2^{32} + 1}{N}$$

$$R = 0$$

$$\frac{x}{N}$$

x is a nu

$$\frac{2^{32} + 1}{a + 1}$$

$$\begin{aligned} 2^{32} + 1 &= (2^{16})^2 + 1 \\ &= (a^2 + 1) \\ &\underline{\underline{= (a+1)(a^2-a+1)}} \end{aligned}$$

Ganesh

111.

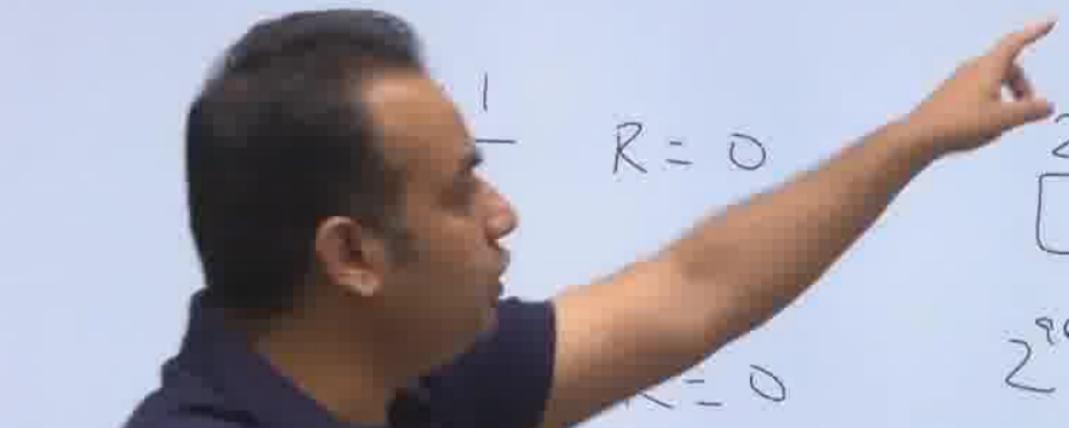
It is being given that $(2^{32} + 1)$ is completely divisible by a whole number. Which of the following numbers is completely divisible by this number?

(a) $(2^{16} + 1)$

(b) $(2^{16} - 1)$

(c) 7×2^{33}

(d) $12^{33} + 1$



$R = 0$

$$\begin{array}{r} 2^{32} + 1 \\ \hline a + 1 \end{array}$$

$$\text{Ex of } 2^{32} + 1$$

$$\begin{aligned} 2^{32} + 1 &= (2^{16})^2 + 1 \\ &= (a^2 + 1) \\ &\equiv (a+1)(a-a+1) \end{aligned}$$

Ganesh

111. It is being given that $(2^{32} + 1)$ is completely divisible by a whole number. Which of the following numbers is completely divisible by this number?

(a) $(2^{16} + 1)$

(b) $(2^{16} - 1)$

(c) 7×2^{33}

(d) $(2^{32} - 1)$



$$\frac{2^{32} + 1}{a + 1}$$

$$\begin{aligned}2^{96} + 1 &= (2^{32})^3 + 1 \\&= (q^3 + 1) \\&\underline{\underline{= (q+1)(q^2-q+1)}}\end{aligned}$$

Ganesh

Q.13

+2 -0.5

$$\begin{array}{r} 67^{67} \\ + 67 \\ \hline 68 \end{array}$$

$$-1 + 67 = 66$$

A 1

B 63

C 66

D 67

SKIPPED

Manoj Kumar

Q.5

+2 -0.5

Find the remainder of:

$$\frac{10^{5^7} + 10^{17^{18}} + 10^{35!} + 10^{29}}{6}$$

A 1

B 4

SKIPPED

C 0

D 5

Q.1

+2, -0.5

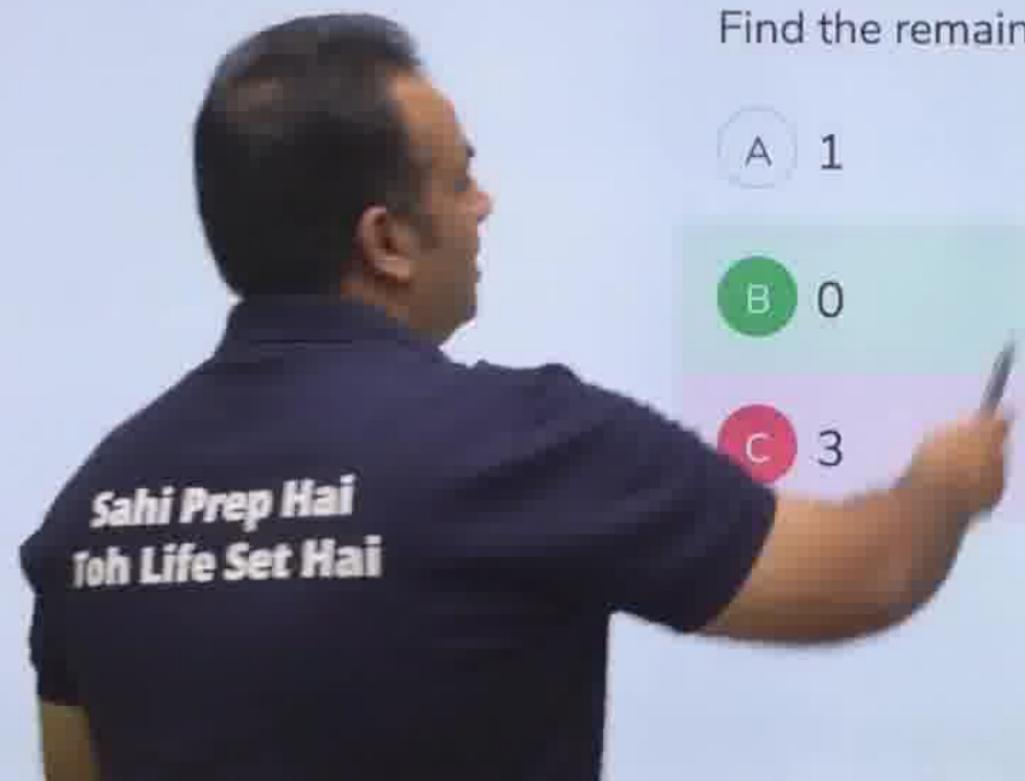
$$\frac{2222^{5555} + 5555^{2222}}{7}$$

Find the remainder of:

A 1

B 0

C 3



Q.1

+2, -0.5

1st method

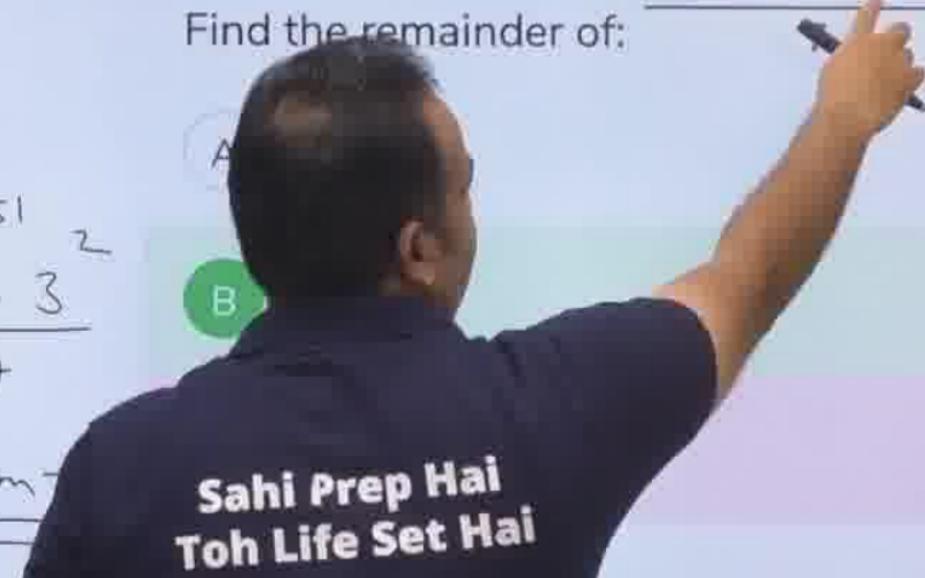
$$\underbrace{(2222)}_{7}^{5555}$$

$$= \frac{3^{5555}}{7} = \frac{(3^3)^{1851} \cdot 3^2}{7} = \frac{-1 \cdot 2}{7}$$

Find the remainder of:

9mp

$$\frac{2222^{5555} + 5555^{2222}}{7}$$



Q.1

+2, -0.5

1st method

$$\begin{array}{r} 5555 \\ \times 2222 \\ \hline 11110 \\ 11110 \\ \hline 5555 \end{array}$$

$$\begin{aligned}
 &= \frac{5555}{7} = \left(\frac{3}{7} \right)^{1851} \\
 &= -1 \frac{2}{7}
 \end{aligned}$$

Find the remainder of:

2nd

$$\frac{2222^{5555} + 5555^{2222}}{7}$$

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Q.1

+2.-0.5

1st method

$$\begin{array}{r} 5555 \\ \times 2222 \\ \hline 7 \end{array}$$

$$= \frac{5555}{7} = \frac{(3^3)^{1851}}{7} = \frac{-12}{7}$$

9mp

Find the remainder of:

$$\frac{2222^{5555} + 5555^{2222}}{7}$$

$$\begin{array}{r} 2222 \\ \times 4 \\ \hline \end{array}$$

$$(4^3)^{1851}$$

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Q.1

+2,-0.5

1st method

$$(2222)^{5555}$$

$$\begin{array}{r}
 7 \\
 3 \overline{)851} \\
 -3 \\
 \hline
 51 \\
 -49 \\
 \hline
 2
 \end{array}$$

9mp

Find the remainder of:

$$\frac{2222^{5555} + 5555^{2222}}{7}$$

A 1

B 0

D 6

$$\begin{array}{r}
 4^{2222} \\
 4 \\
 \hline
 (4^3)^{740} \cdot 4^2 \\
 \hline
 7 = 2
 \end{array}$$

1st method

(2222) 5555

$$= \frac{3}{7} = \underline{\underline{(3)}}^{185}$$

- 1 -

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1
0

9

Find the remainder of

$$\begin{array}{r} 5 \\ 2 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 2222 \\ \times 4 \\ \hline 740 \end{array}$$

AutoSave 0:08 Doubt Session

File Home Insert Draw Design Transitions Animations Slide Show Review View MatchType Help

Team Options Present Custom Slide Show Refresh with Coach Set Up Slide Show Hide Slide Refresh & Record Slide Timings Show

Play Narration Show Media Controls Use Presenter View

Always Use Title Bar Standard Settings

Start Slideshow

Slide 10

Meeting

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grouped

Q.1

$\frac{2222}{7}$

Find the remainder of:

$(\overline{2222})^{5655} \times (\overline{3})^{1451} \div 7$

$= \frac{2}{7} \times \frac{3^{1451}}{7} = \frac{2}{7} \times 3 \times \frac{3^{1450}}{7}$

$= \frac{2}{7} \times 3 \times \underbrace{\frac{3^{1450}}{7}}_{\text{Remainder}}$

A. 1

2222

4

0

3

2

p. 6

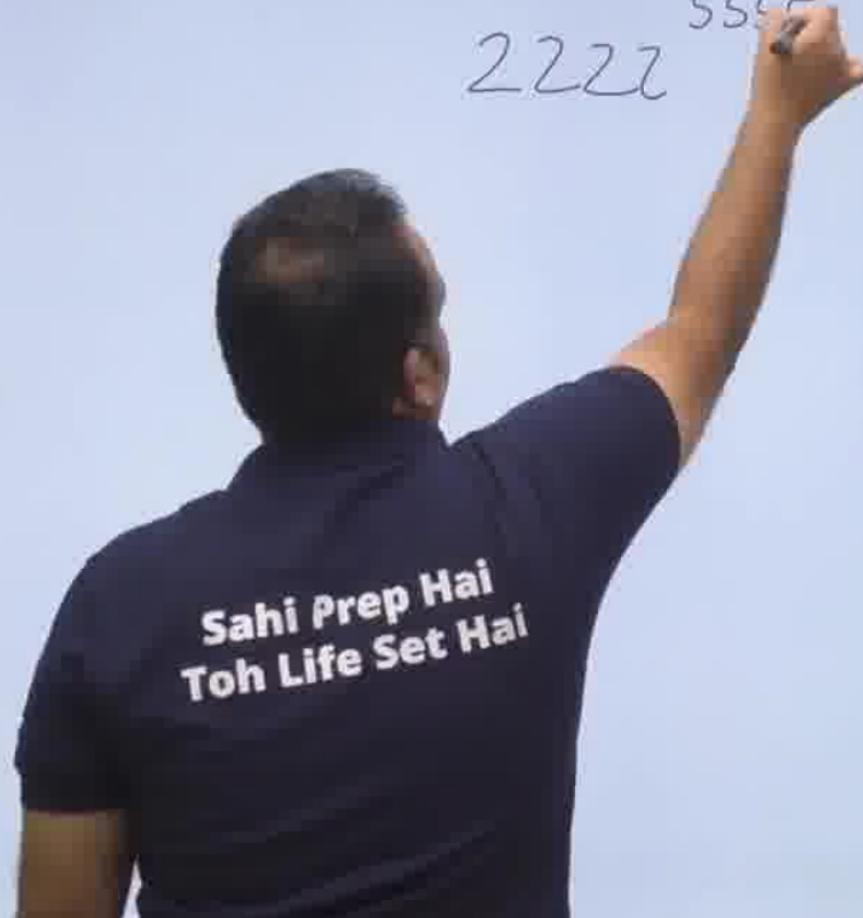
Notes

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08:29 AM

ahi Prep Hai
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5555
2222



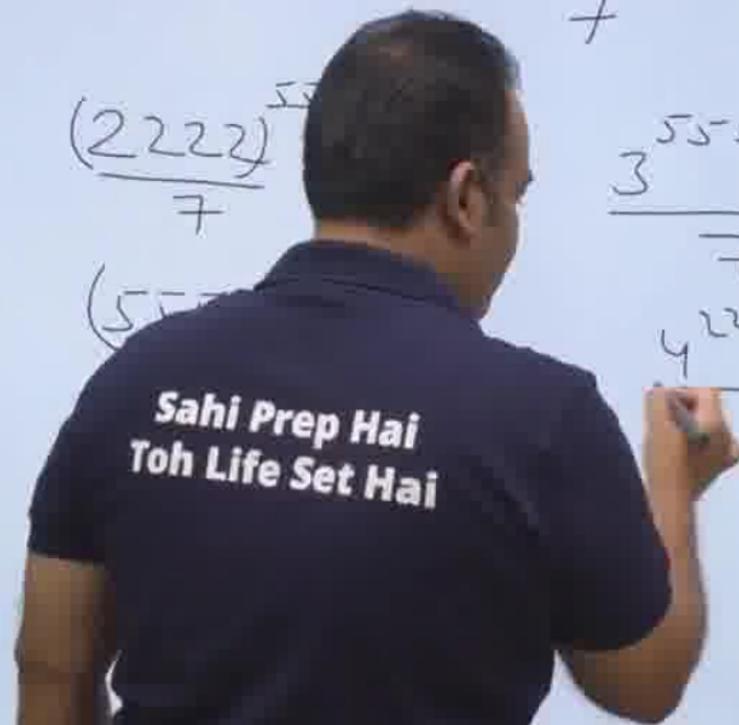
$$\begin{array}{r} 5555 \\ 2222 \quad + \quad 5555 \\ \hline 7 \end{array}$$

$$\begin{array}{r} (2) \\ = \quad \frac{5555}{7} \end{array}$$

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$$\begin{array}{r} 5555 \\ 2222 \\ + 5555 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 5555 \\ (2222) \\ \hline 7 \\ (5555) \\ \hline 3 \\ \hline 7 \\ 4222 \end{array}$$



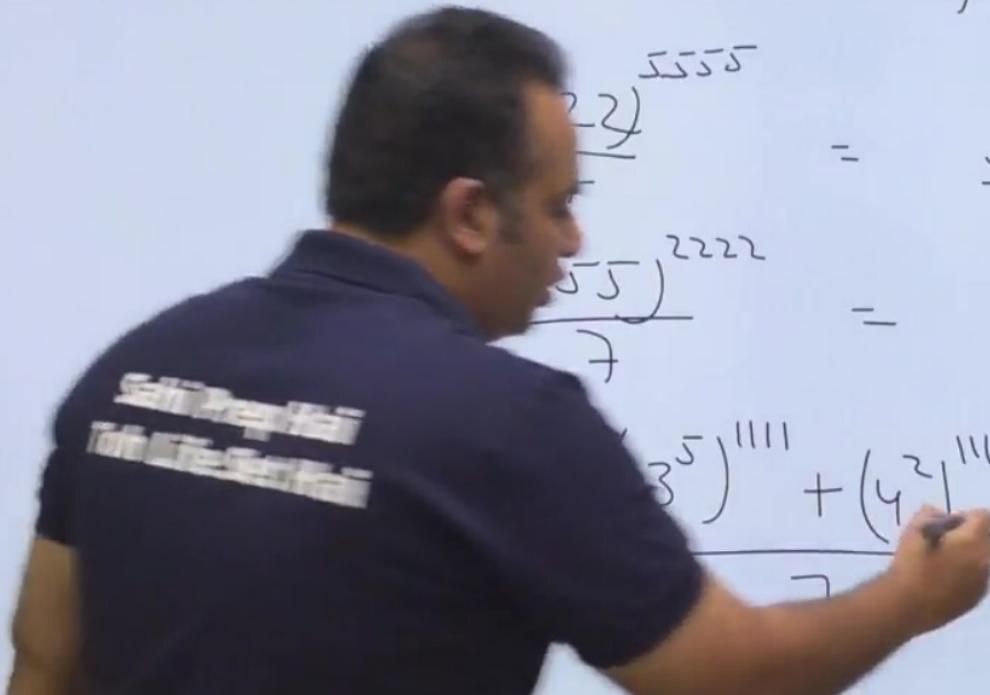
$$\boxed{\frac{x^n + y^n}{x+y} \text{ if } n \rightarrow \text{odd}}$$

$$\frac{2222^{5555} + 5555^{2222}}{7}$$

$$\frac{22^{5555}}{7} = \frac{3^{5555}}{7}$$

$$\frac{55^{2222}}{7} = \frac{4^{2222}}{7}$$

$$\frac{(3^5)^{1111} + (4^2)^{1111}}{7}$$



$$\boxed{\frac{x+y}{x+y} \text{ if } n \rightarrow \text{odd}}$$

$$\begin{array}{r} 5555 \\ 2222 \\ + 5555 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 5555 \\ (2222) \\ \hline 7 \\ 5555 \\ \hline 7 \\ 3 \\ 5555 \\ \hline 7 \\ 4222 \\ \hline 7 \end{array}$$

$$(243)^{1111}$$

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$$\boxed{\frac{x^n + y^n}{x+y} \text{ if } n \rightarrow \text{odd}}$$

$$\frac{2222^{5555} + 5555^{2222}}{7}$$

$$\frac{(2222)^{5555}}{7} =$$

$$\frac{(5555)^{2222}}{7}$$



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$$111 + 1(111)$$

$$\boxed{\frac{x^n + y^n}{x+y} \text{ if } n \rightarrow \text{odd}}$$

$$\frac{2222^{5555} + 5555^{2222}}{7}$$

$$\begin{aligned}
 & (2) \quad \frac{555}{22} = \frac{55-55}{7} \\
 & - \quad \frac{4^{2222}}{7} \\
 & \underline{+ (4^2)^{1111}} \quad = (243)^{1111} + 1^{1111}
 \end{aligned}$$

$$\boxed{\frac{x^n + y^n}{x+y} \text{ if } n \rightarrow \text{odd}}$$

$$\begin{array}{r} 5555 \\ 2222 \\ + 5555 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 5555 \\ (2222) \\ \hline 7 \\ = \\ (5555) \\ \hline 7 \\ 222 \\ \hline 7 \end{array}$$

$$\begin{array}{r} (243)^{|||} + (10)^{|||} \\ \hline 27 \end{array}$$

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I method

$$\begin{array}{r} 5555 \\ \hline (2222) \end{array}$$

$$\begin{aligned}
 &= \frac{5555}{7} = \left(\frac{3^3}{7} \right)^{1851} \cdot 3^2 \\
 &= -1 \cdot 2 \quad \text{Rem} = 5
 \end{aligned}$$

Q.1

9mp

Find the remainder of:

$$\begin{array}{r}
 5 \quad 2 \\
 \hline
 \cancel{2222}^{5555} + \cancel{5555}^{2222} \\
 \hline
 7
 \end{array}$$

A 1

$$\cancel{(3^3)^{740} \cdot 3^2}$$

B 0

C 3
WRONG

D 6

$$\begin{array}{r}
 2222 \\
 4 \\
 \hline
 \cancel{(4^3)^{740} \cdot 4^2} \\
 \hline
 7 = 2
 \end{array}$$

Q.11

+2, -0.5

What is the remainder when the product of 177, 414 and 837 is divided by 12?

A 9

B 6
SKIPPED

C 2

D 1



$$\begin{array}{r} 67^{67} \\ + 67 \\ \hline 68 \end{array}$$

$$-1 + 67 = 66$$

A 1

B 63

C 66
SKIPPED

D 67

- ① When 6892, 7105, 7531 are divided by the greatest number x , then the remainder in each case is y . What is the value of $(x-y)$?

— 7th May Quiz (Q.7)

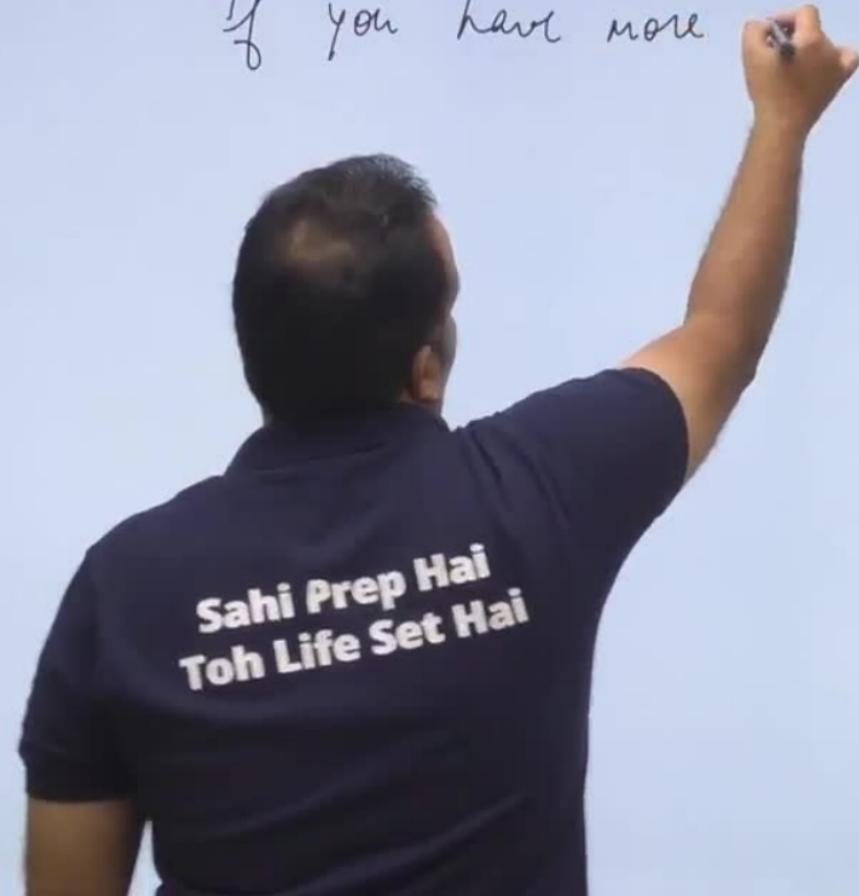




If you ha



If you have more



If you have more Doubts

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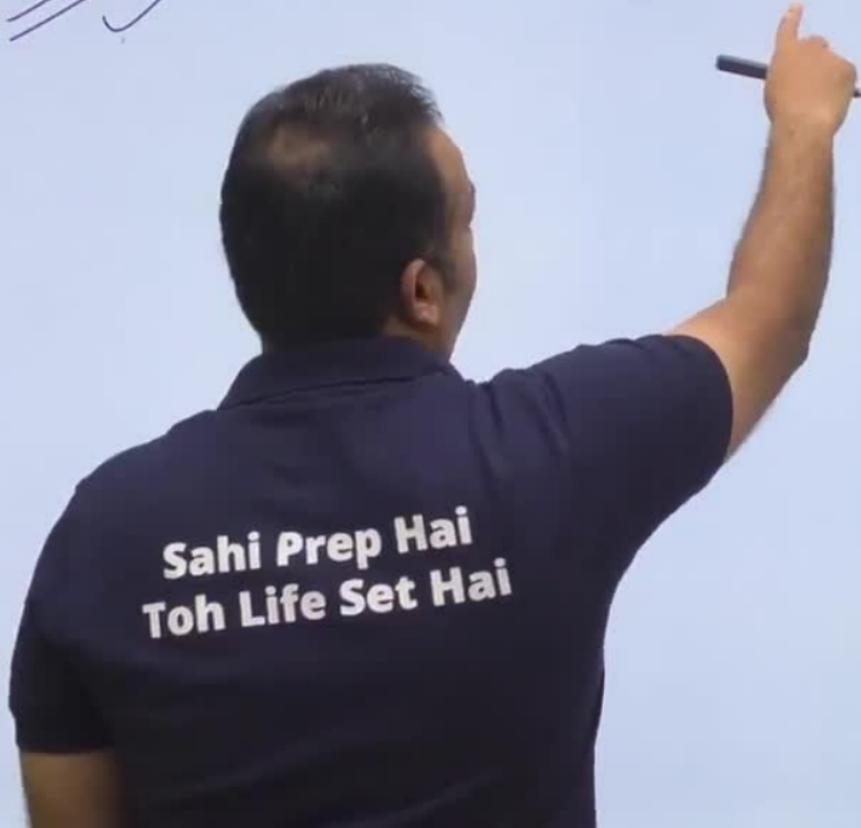
* Telegram Group

Question solution

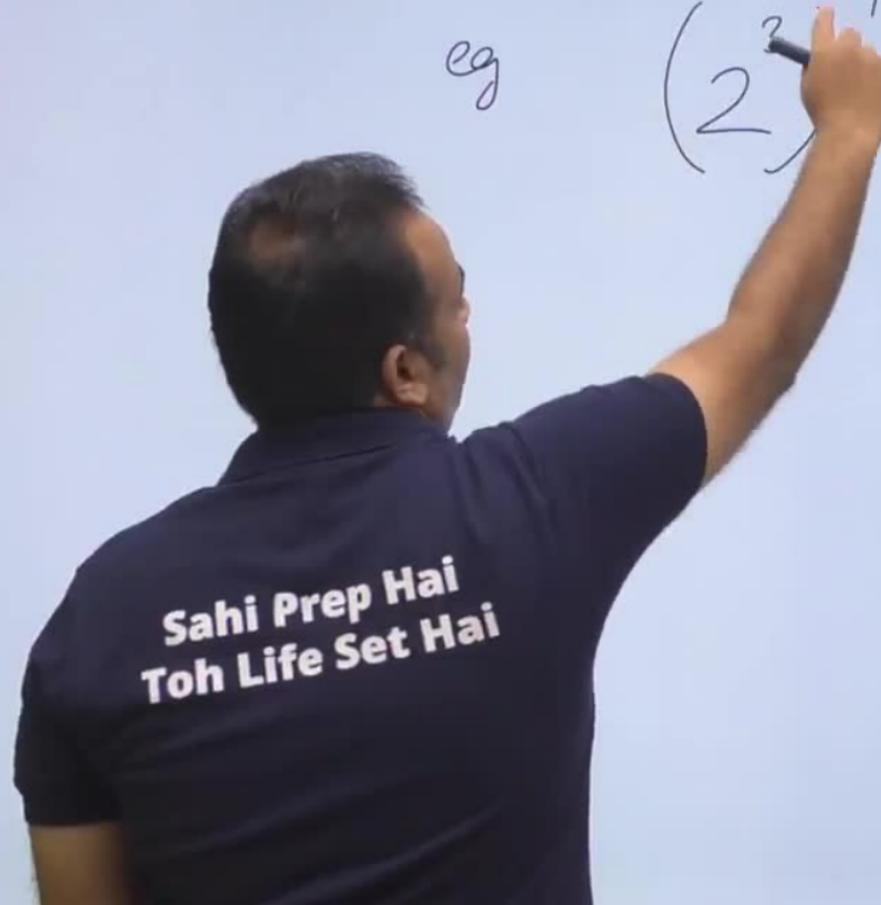
③ Which of the following is the largest 4-digit number which can be added to 7891 in order to make the derived number divisible by each of 7, 11, 12, 27 & 28.

- 7th May Quiz (Q.4)

V. Ques
④ Find the HCF of $(3^{3^{553}} + 1)$ & $(3^{3^{554}} + 1)$ - 7th May (HW Ques)



eg $(2^3)^4 =$



eg $(2^3)^4 = 2^1$



eg $(2^3)^4 = 2^{12}$

$= 2^{81}$

$\text{eg } -2^3 = -8$

$= 5^8$

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eg

$$\left(2^3\right)^4 = 2^{12}$$

$$2^3^4 = 81$$

eg

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eg $(2^3)^4 = 2^{12}$

$$2^3^4 =$$

eg

$$3^6^4 = 3^{24}$$

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eg

$$(2^3)^4 = 2^{12}$$

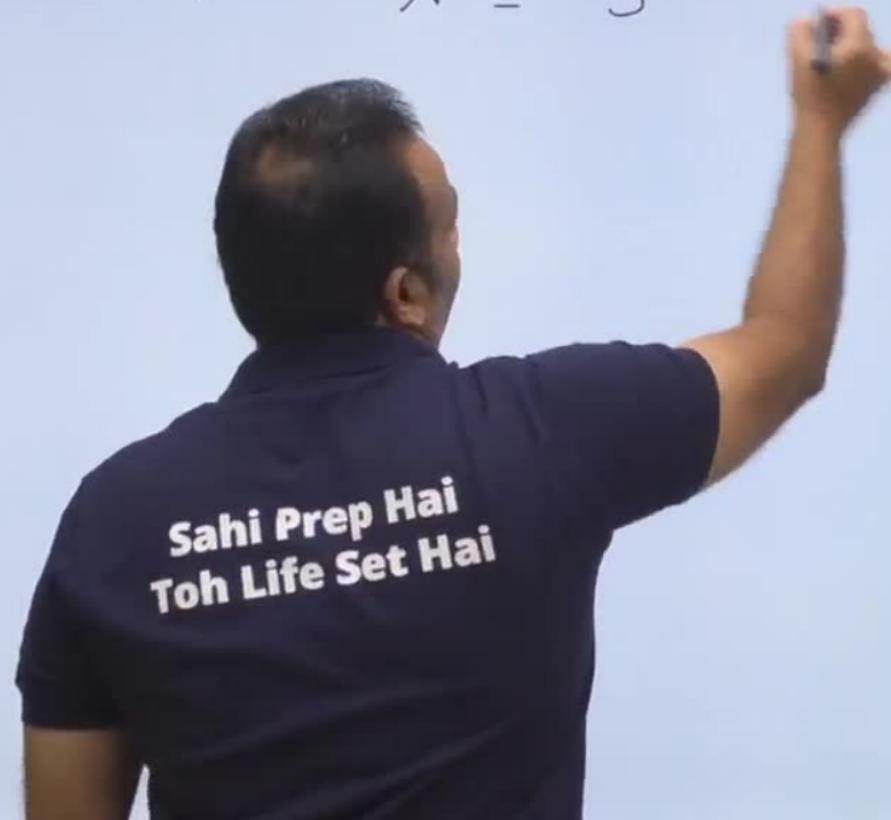
$$2^3^4 = 8^4 = 4096$$

eg

$$6^4 = ?$$

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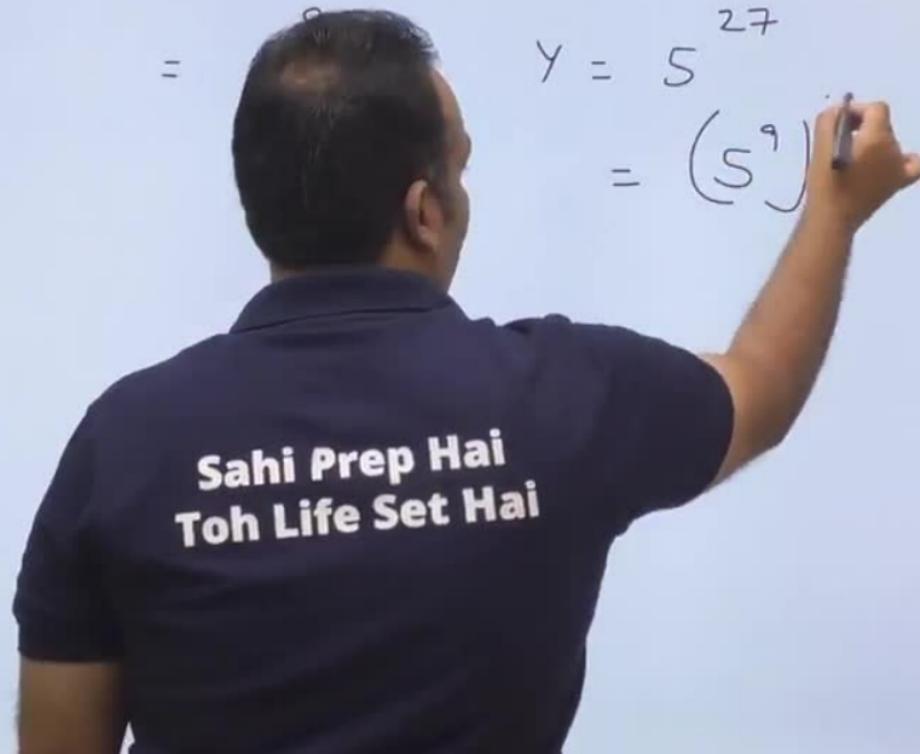
eg $X = 5^3^2$



eg $X = 5^{3^2}$ $Y = 5^{3^3}$

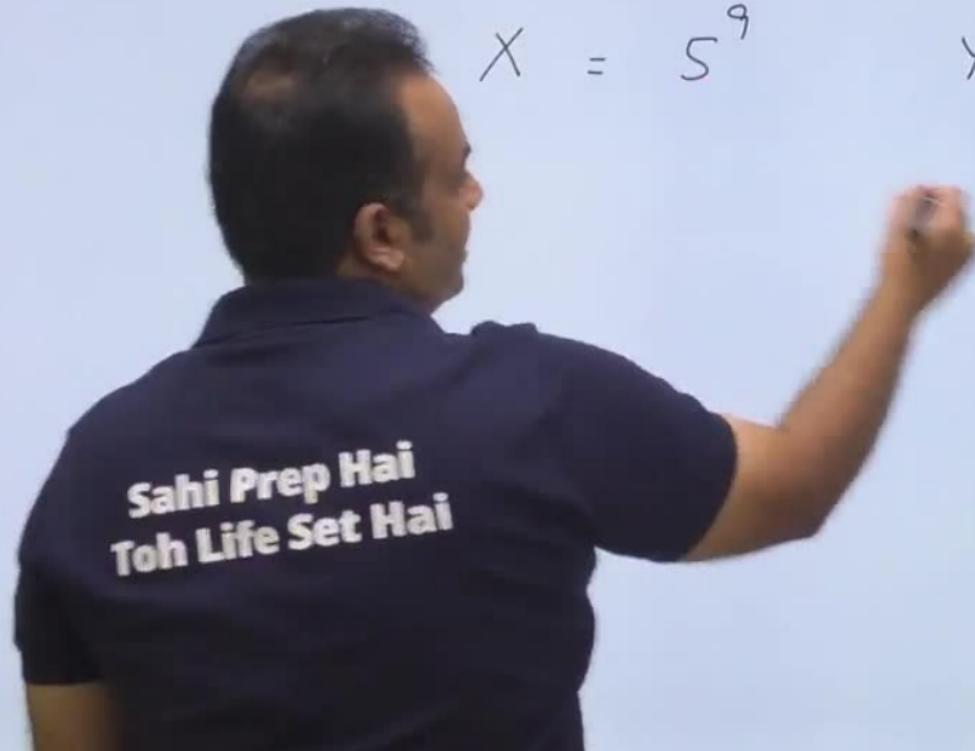
$$= 5^{27}$$

$$= (5^9)$$



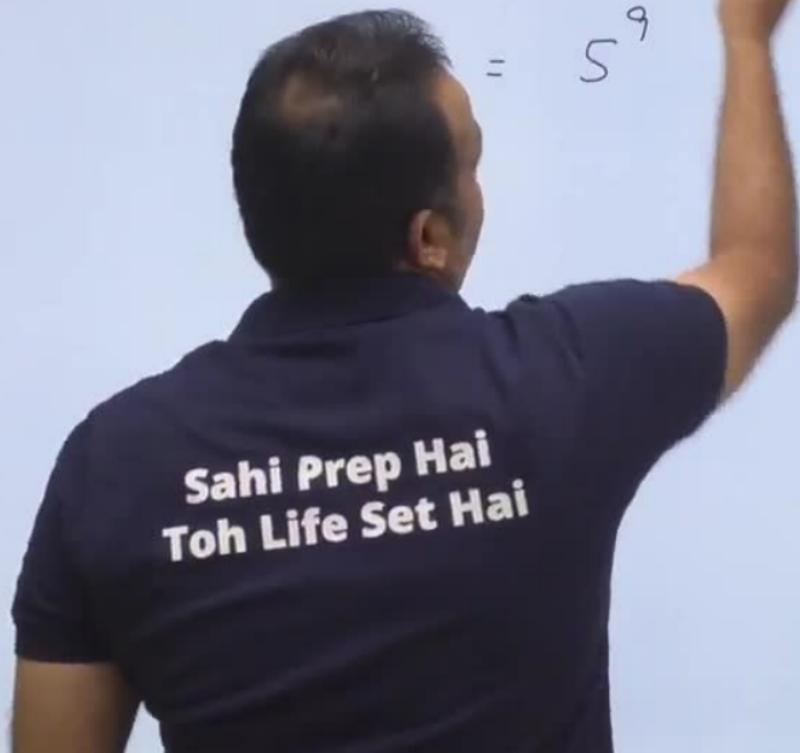
eg $X = 5^{3^2}$ $Y = 5^{3^3}$

$$\begin{aligned}X &= 5^9 & Y &= 5^{27} \\&= (5^9)^3\end{aligned}$$



eg

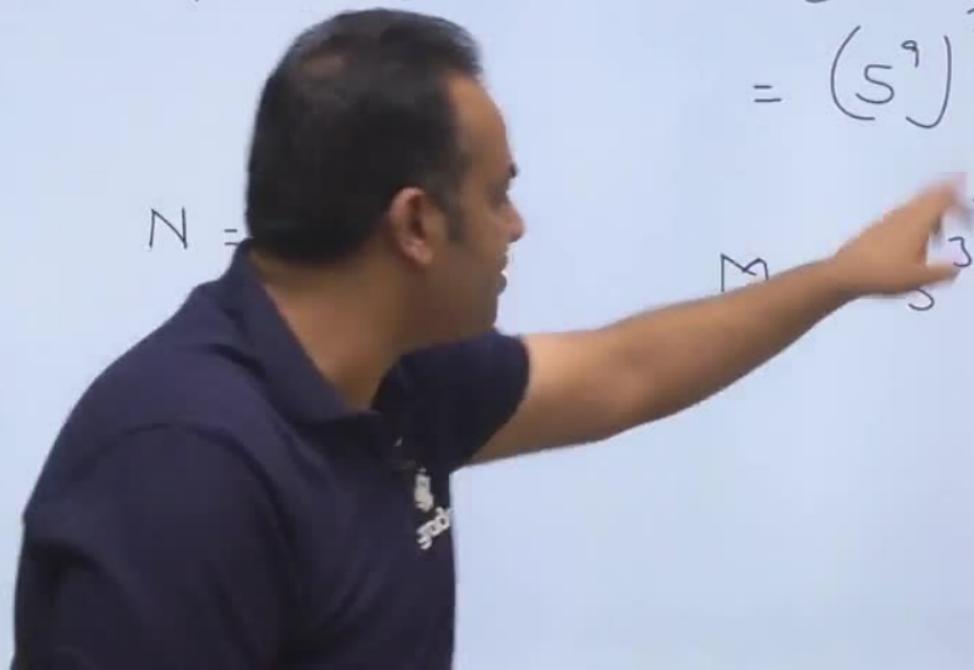
$$\begin{aligned} X &= 5^{3^2} \\ &= 5^9 \\ Y &= 5^{3^3} \\ &= (5^9)^3 = X^3 \end{aligned}$$



eg $X = 5^{3^2}$ $Y = 5^{3^3}$

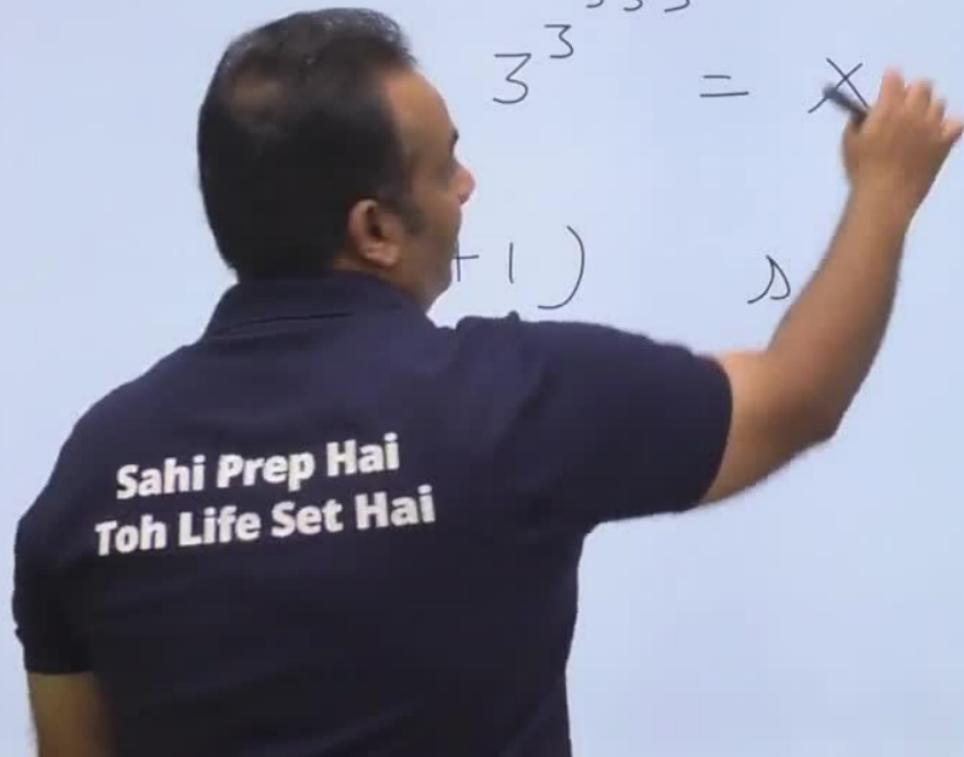
$$\begin{aligned}X &= 5^9 & Y &= 5^{27} \\&= (5^9)^3 & &= X^3\end{aligned}$$

$$N = M^{3^{79}}$$



V. Qmp
④ Find the HCF of $(3^{3^{553}} + 1)$ & $(3^{3^{554}} + 1)$ - 7th May (HW Ques.)

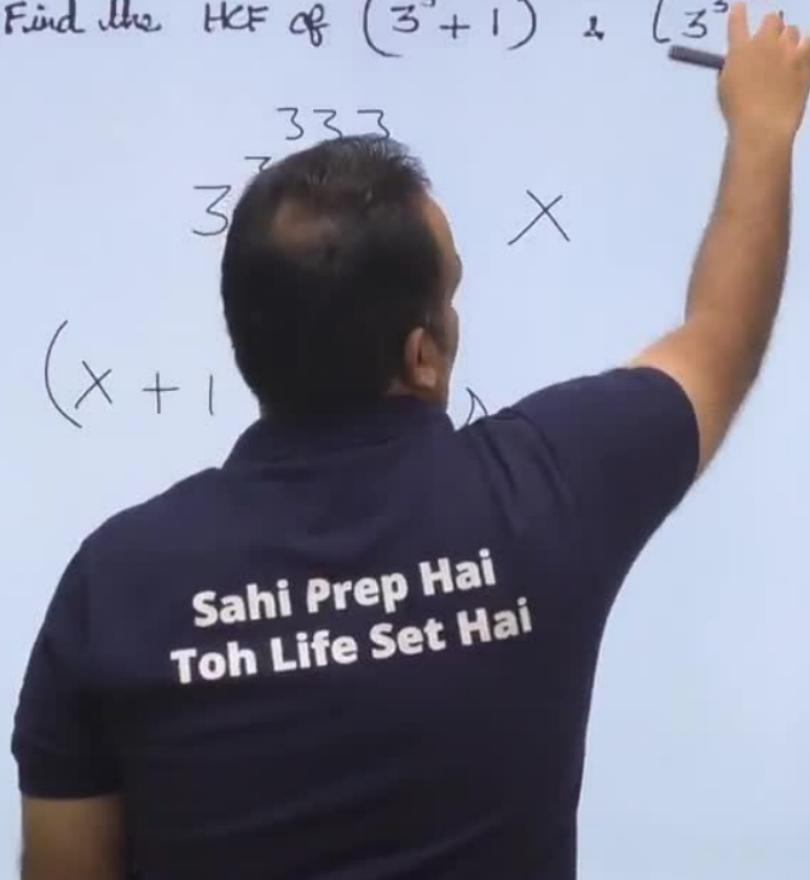
$$3^{3^{3^{3^3}}} = X$$
$$(3^3 + 1) \quad \lambda$$



V. Ques. ④ Find the HCF of $(3^{3^{53}} + 1)$ & $(3^{3^{54}} + 1)$ - 7th May (HW Ques.)

$$3^{3^{333}} \times$$

$$(x + 1)$$



V. Qmp
④ Find the HCF of $(3^{3^{53}} + 1)$ & $(3^{3^{54}} + 1)$ - 7th May (HW Ques.)

$$\begin{array}{c} 333 \\ 3^3 \quad X \end{array}$$

$$(x+1) \quad (x^3+1)$$

$$(x+1)($$

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V. Qmp ④ Find the HCF of $(3^{3^{553}} + 1)$ & $(3^{3^{554}} + 1)$ - 7th May (HW Ques.)

$$3^{3^{333}} = X$$

$$(x+1)$$

$$(x^3+1)$$

$$\frac{(x+1)(x^2-x+1)}{ }$$

$$\left. \begin{matrix} 3^{3^{333}} \\ 3^3 + \end{matrix} \right\}$$

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V. Qn. ④ Find the HCF of $(3^{3^{3^{63}}} + 1)$ & $(3^{3^{3^{54}}} + 1)$ - 7th May (HW Ques.)

$$3^{3^{3^{3}}} = X$$

$$(x+1) \rightarrow (x^3+1)$$

$$\frac{(x+1)}{(x+1)(x^2-x+1)}$$

HCF : $3^{3^{3^{3}}} + 1$

Ques 5 HCF of 3240, 3600 & third number x is 36. Their LCM is $2^4 \times 3^5 \times 5^4 \times 7^2$. Find x?
— 7th May (HW Ans)



$$\left| \begin{array}{l} 3240 = 2^3 \cdot 3^4 \cdot 5^1 \\ 3600 = 2^4 \cdot 3^2 \cdot 5^2 \end{array} \right.$$

$$x =$$

$$\text{HCF} = 2^2 \cdot 3^2$$

$$\text{LCM} = 2^4 \cdot 3^5 \cdot 5^2 \cdot 7^2$$

Ques. ⑥ $20^{2004} + 16^{2004} - 3^{2004} - 1^{2004}$ is divisible by
— 4th May (HW Ans)



- ① When 6892, 7105, 7531 are divided by the greatest number x , then the remainder in each case is y . What is the value of $(x-y)$?

— 7th May Quiz (Q.7)



Ques 6) $20^{2004} + 16^{2004} - 3^{2004} - 1^{2004}$ is divisible by
- 4th May (HW Ans)

Options are Required

A 285

B

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Ques. ⑥ $20^{2004} + 16^{2004} - 3^{2004} - 1^{2004}$ is divisible by
- 4th May (HW Ans)

Options are Required

A 285

B 323

C 7

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Ques. ⑥ $20^{2004} + 16^{2004} - 3^{2004} - 1^{2004}$ is divisible by
— 4th May (HW Ans)

Options are Required

A 285

B 323

C 371

D

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Ques. ⑥ $20^{2004} + 16^{2004} - 3^{2004} - 1^{2004}$ is divisible by
— 4th May (HW Ans)

Options are Required

A 285

B 323

C 371

D

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Ques 6) $20^{2004} + 16^{2004} - 3^{2004} - 1^{2004}$ is divisible by
- 4th May (HW Ans)

Options are Required

$$+ 16^{2004} - 3^{2004}$$

A 285

B 323

C 391

D All of these

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Ques. ⑥ $20^{2004} + 16^{2004} - 3^{2004} - 1^{2004}$ is divisible by
- 4th May (HW Ans)

Options are Required

$$x^n - y^n \rightarrow \text{div by } x-y$$

for all values of n

$$x^n - y^n \text{ div by } (x+y)$$

For even values

of n

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$$+ \begin{array}{r} 2004 \\ 16 - 3 \\ \hline 2004 \end{array}$$

div (12)

A 285

B 323

C 391

D All of thes

Ques. ⑥ $20^{2004} + 16^{2004} - 3^{2004} - 1^{2004}$ is divisible by
— 4th May (HW Ans)

Options are Required

$$x^n - y^n \rightarrow \text{div by } x-y$$

for all values of n

$$x^n - y^n \text{ div by } (x+y)$$

For even values

of n

$$20^{2004} + 16^{2004} - 3^{2004} - 1^{2004}$$

$$+ \underbrace{(16 - 3)^{2004}}_{\text{div } (13, 19)} - 3^{2004}$$

A 285

B 323

C 391

D All of thes

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Toh Life Set Hai

Ques. ⑥ $20^{2004} + 16^{2004} - 3^{2004} - 1^{2004}$ is divisible by
- 4th May (HW Ans)

Options are Required

$$x^n - y^n \rightarrow \text{div by } x-y$$

$$\overbrace{20^{2004} - 1^{2004}}^{\text{div by } (19, 21)} + \overbrace{(16^{2004} - 3^{2004})}^{\text{div by } (13, 19)}$$

for all values of n

$x^n - y^n$ div

- A 285
- B 323
- C 391
- D All of thes

For

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Ques. ⑥ $20^{2004} + 16^{2004} - 3^{2004} - 1^{2004}$ is divisible by
- 4th May (HW Ans)

Options are Required

$$x^n - y^n \rightarrow \text{div by } x - y$$

for all values of n

$$x^n - y^n \text{ div } 1$$

For ev

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$$\begin{array}{c} 20^{2004} \\ - 1 \\ + 16^{2004} - 3^{2004} \\ \hline (19, 21) \end{array} \quad \text{div } (13, 19)$$

$$+ 16^2$$

- A 285
- B 323
- C 391
- D All of thes

Ques. ⑥ $20^{2004} + 16^{2004} - 3^{2004} - 1^{2004}$ is divisible by
- 4th May (HW Eng)

Options are Required

$$x^n - y^n \rightarrow \text{div by } x - y$$

for all values of n

$$x^n - y^n \text{ div by } (x+y)$$

For even values of

Sahi Prep Hai
Toh Life Set Hai

$$20^{2004} + 16^{2004} - 3^{2004} - 1^{2004} \quad \text{div } (13, 19)$$

$$+ 16^{2004} - 1^{2004}$$

A 285

B 323

C 391

D All of thes

Ques. ⑥ $20^{2004} + 16^{2004} - 3^{2004} - 1^{2004}$ is divisible by
- 4th May (HW Ans)

Options are Required

$$x^n - y^n \rightarrow \text{div by } x - y$$

for all values of n

$$x^n - y^n \text{ div by } (x+y)$$

For even values of n

$$(20^{2004} + 16^{2004}) - (3^{2004} - 1^{2004})$$

$$\text{div } (13, 19)$$

A 285

B 323

C 391

D All of thes

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Toh Life Set Hai

$$2^{2004} + 16^{2004} - 3^{2004} - 1^{2004}$$

div by

Ques. ⑥ $20^{2004} + 16^{2004} - 3^{2004} - 1^{2004}$ is divisible by
- 4th May (HW Ans)

Options are Required

$$x^n - y^n$$

for a

$$\underbrace{20^{2004} - 1^{2004}}_{\text{div by } (19, 21)} + \underbrace{16^{2004} - 3^{2004}}_{\text{div by } (13, 19)}$$

A 285

B 323

C 391

D All of thes

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Toh Life Set Hai

$$\underbrace{20^{2004} - 3^{2004}}_{\text{div by } (17, 23)} + \underbrace{16^{2004} - 1^{2004}}_{\text{div by } (17, 15)}$$

div by (17, 23)

div by (17, 15)

Ques. ⑥ $20^{2004} + 16^{2004} - 3^{2004} - 1^{2004}$ is divisible by
- 4th May (HW Ans)

Options are Required

$$x^n - y^n \rightarrow \text{div by } x - y$$

for all values of n

$$x^n - y^n \text{ div by } (x-y)$$

For even
of

$$20^{2004} + 16^{2004} - 3^{2004} - 1^{2004} \text{ div by } (13)(19)$$

A 285

B 323

C 391

D All of thes

$$2^{2004} + 16^{2004} - 3^{2004} - 1^{2004} \text{ div by } (17)(15)$$

by 15

$$2^{2004} + 16^{2004} - 3^{2004} - 1^{2004} \text{ div by } (17)(15)$$

$$2^{2004} + 16^{2004} - 3^{2004} - 1^{2004} \text{ div by } (17)(15)$$

Ques. ⑥ $20^{2004} + 16^{2004} - 3^{2004} - 1^{2004}$ is divisible by
- 4th May (HW Ans)

Options are Required

$$x^n - y^n \rightarrow \text{div by } x-y$$

for all values of n

$$x^n - y^n \text{ div by } (x+y)$$

For even values
of n

$$\begin{array}{r} 20^{2004} \quad 2004 \\ 20 - 1 \end{array} + \begin{array}{r} 16^{2004} \quad 2004 \\ 16 - 3 \end{array}$$

div by (19, 21)

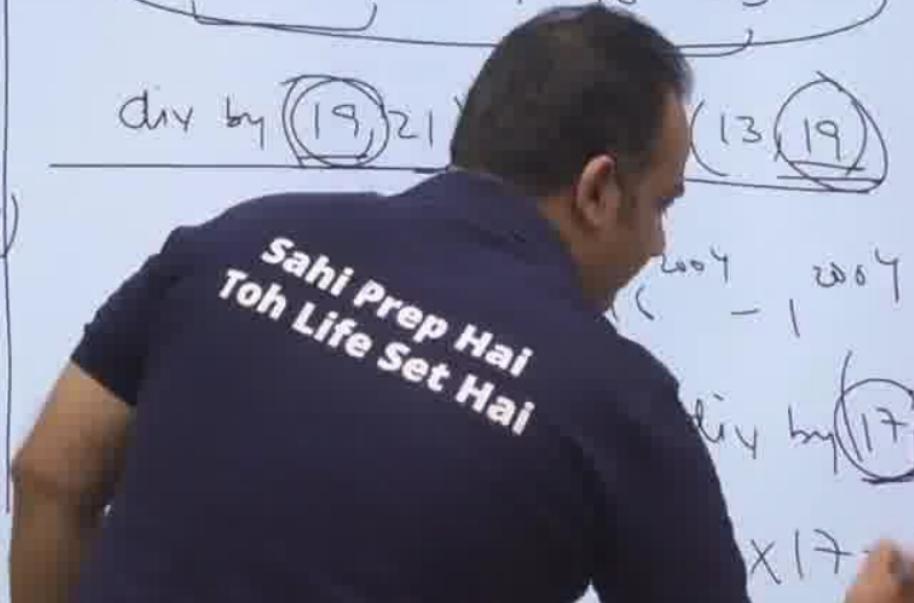
(13, 19)

A 285

B 323

C 391

D All of thes



Ques. ⑥ $20^{2004} + 16^{2004} - 3^{2004} - 1^{2004}$ is divisible by
- 4th May (HW Ans)

Options are Required

$$x^n - y^n \rightarrow \text{div by } x - y$$

for all values of

$$x^n - y^n \text{ div by }$$

For e

$$\frac{20^{2004} - 1}{x - y} + 16^{2004} - 3^{2004}$$

div by (19, 21)

div by (13, 19)

A 285

B 323

C 391

D All of thes

$$20^{2004} - 1^{2004} + 16^{2004} - 3^{2004}$$

div by (17, 23)

div by (17, 15)

div by $19 \times 17 = 323$

~~Ques~~ ⑥ $20^{2004} + 16^{2004} - 3^{2004} - 1^{2004}$ is divisible by
- 4th May (HW Ans)

Options are Required

$$x^n - y^n \rightarrow \text{div by } x-y$$

for all values of n

$$x^n - y^n \text{ div by } (x+y)$$

For even values

of n

$$20^{2004} + 16^{2004} - 3^{2004} - 1^{2004}$$

A 285

B 323

C 391

D All of these

$$(20 - 1)^{2004}$$

(23)

div by (17)(15)

div by $19 \times 17 = 323$

④ Find how many factors of L are multiple of 20?

$$L = 2^5 \cdot 3^2 \cdot 5^3$$

- 30th April (HW End)

= "

$$2^5 \cdot 3^2 \cdot 5^3$$

$$2^2 \cdot 5^1 \left(\text{ } \right)$$

multiple of 20

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④ Find how many factors of L are multiple of 20?

$$L = 2^5 \cdot 3^4 \cdot 5^3$$

- 30th April (HW End)

multiples of 20

$$= 2^2 \cdot 5^1$$

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$$\begin{array}{c} 2 \\ | \\ 5 \\ | \\ (2^3 \ 3^2 \ 5^2) \end{array}$$

④ Find how many factors of L are multiple of 20?

$$L = 2^5 \cdot 3^2 \cdot 5^3$$

- 30th April (HW)

$= \frac{5}{2} \cdot \frac{2}{3} \cdot \frac{3}{5}$

multiples of 20

$$= 2^2 \cdot 5^1 \left(\frac{2^3 \cdot 3^2 \cdot 5^2}{2 \cdot 3 \cdot 5} \right)$$

71 feet

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④ Find how many factors of L are multiple of 20?

$$L = 2^5 \cdot 3^4 \cdot 5^3$$

- 30th April (HW End)

multiples of 20

$$= 2^2 \cdot 5^1$$

$$\begin{array}{r} 2^5 \\ \times 3^4 \\ \hline 2^2 \quad 3^3 \quad 2^2 \end{array} \quad (2 \cdot 3 \cdot 5)^2$$

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Toh Life Set Hai

which are multiples

④ Find how many factors of L are multiple of 20?

$$L = 2^5 \cdot 3^4 \cdot 5^3$$

- 30th April (HW End)

multiples of 20

$$= 2^2 \cdot 5^1$$

$$2^5 \cdot 3^2 \cdot 5^3$$

$$(2^2 \cdot 5^1) \cdot (2^2 \cdot 5^2)$$

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are multiples

$$3 - \sqrt{3}$$

④ Find how many factors of L are multiple of 20?

$$L = 2^5 \cdot 3^2 \cdot 5^3$$

- 30th April (HW End)

multiples of 20

$$= \underline{\underline{2^2 5^1}}$$

$$2^5 \cdot 3^2 \cdot 5^3$$

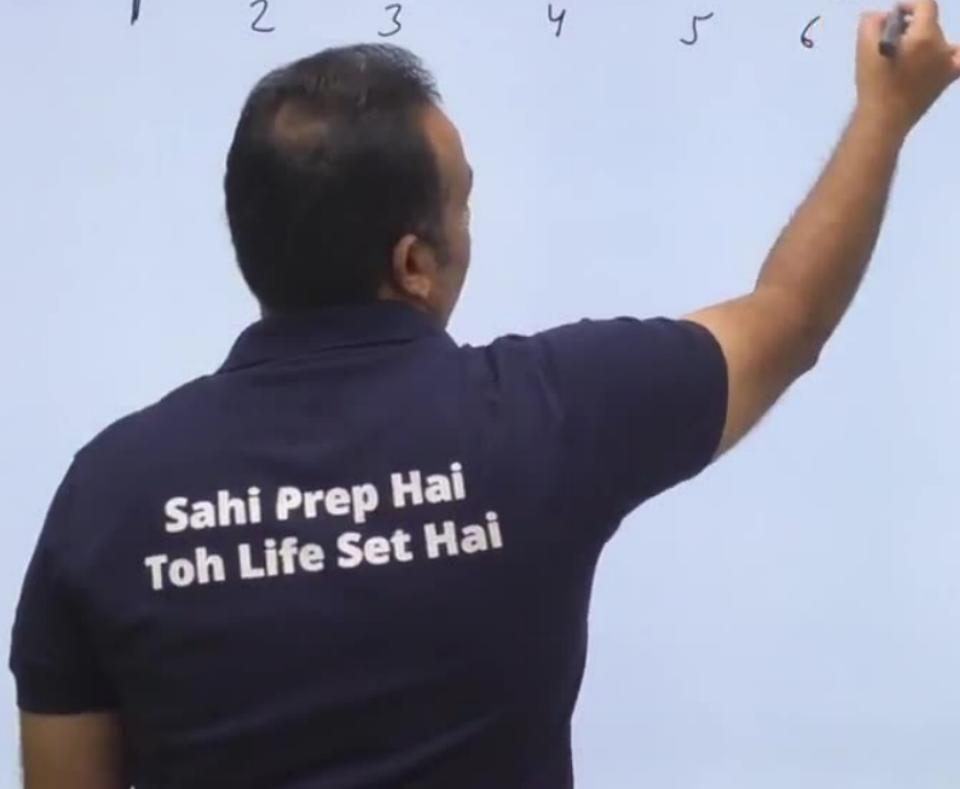
$$2^2 5^1 \left(\underline{\underline{2^3 3^2 5^2}} \right)$$

No. of factors which are multiples
of 20 $\rightarrow 4 \times 3 \times 3 \Rightarrow 36$

Unit digit

Q17. $1^1 + 2^2 + 3^3 + 4^4 + \dots + 100^{100}$

1 2 3 4 5 6



Unit digit

$$\text{Q17. } 1^1 + 2^2 + 3^3 + 4^4 + \dots + 100^{100}$$

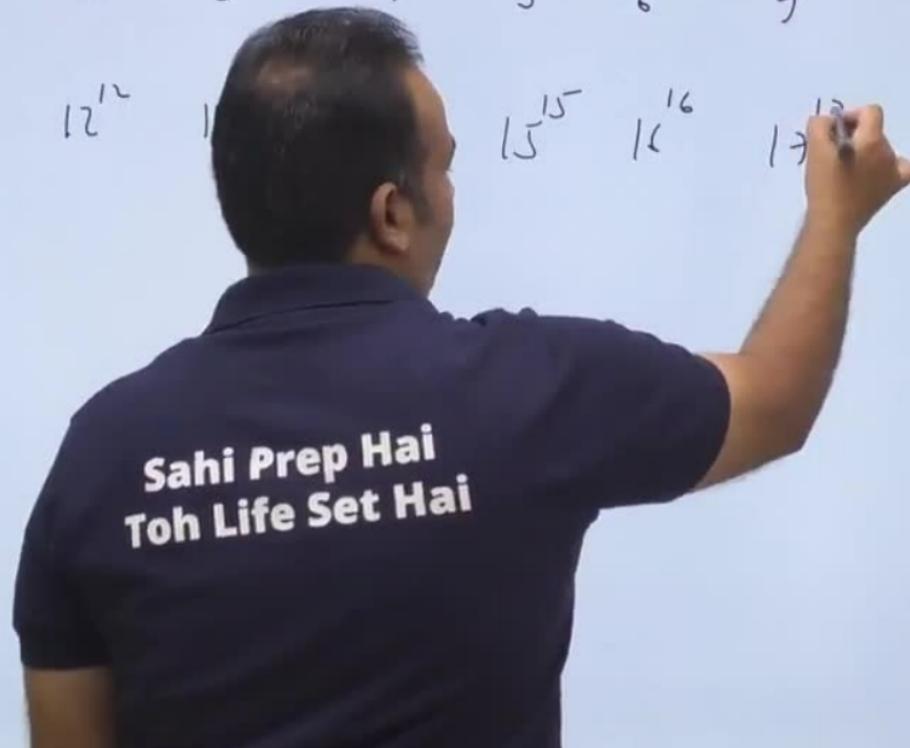
$$\begin{array}{cccccccccc} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 & 10 \\ 1^1 & 12^2 & 13^3 & 14^4 & 15^5 & 16^6 & 17^7 & 18^8 & 19^9 & 100^{10} \end{array}$$

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Unit digit

Q17. $1^1 + 2^2 + 3^3 + 4^4 + \dots + 100^{100}$

$$\begin{array}{cccccccccc} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 & 10 \\ 1^1 & 2^2 & 3^3 & 4^4 & 5^5 & 6^6 & 7^7 & 8^8 & 9^9 & 10^{10} \end{array}$$



Unit digit Q17. $1^1 + 2^2 + 3^3 + 4^4 + \dots + 100^{100}$

1 2 3 4 5 6 7 8 9 10

11 12 13 14 15 16 17 18 19 20

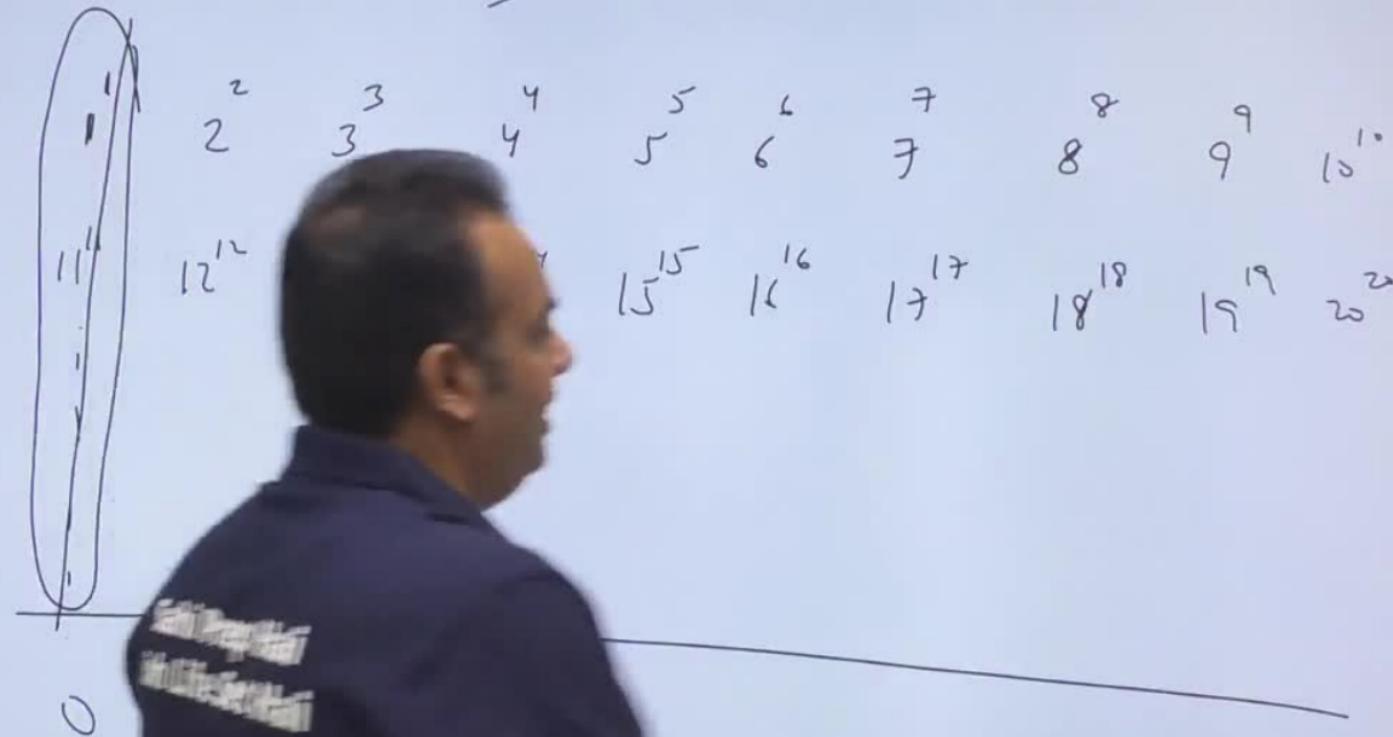
1

1

1

1

i
ai

Unit digitQ17. $1^1 + 2^2 + 3^3 + 4^4 + \dots + 100^{100}$ 

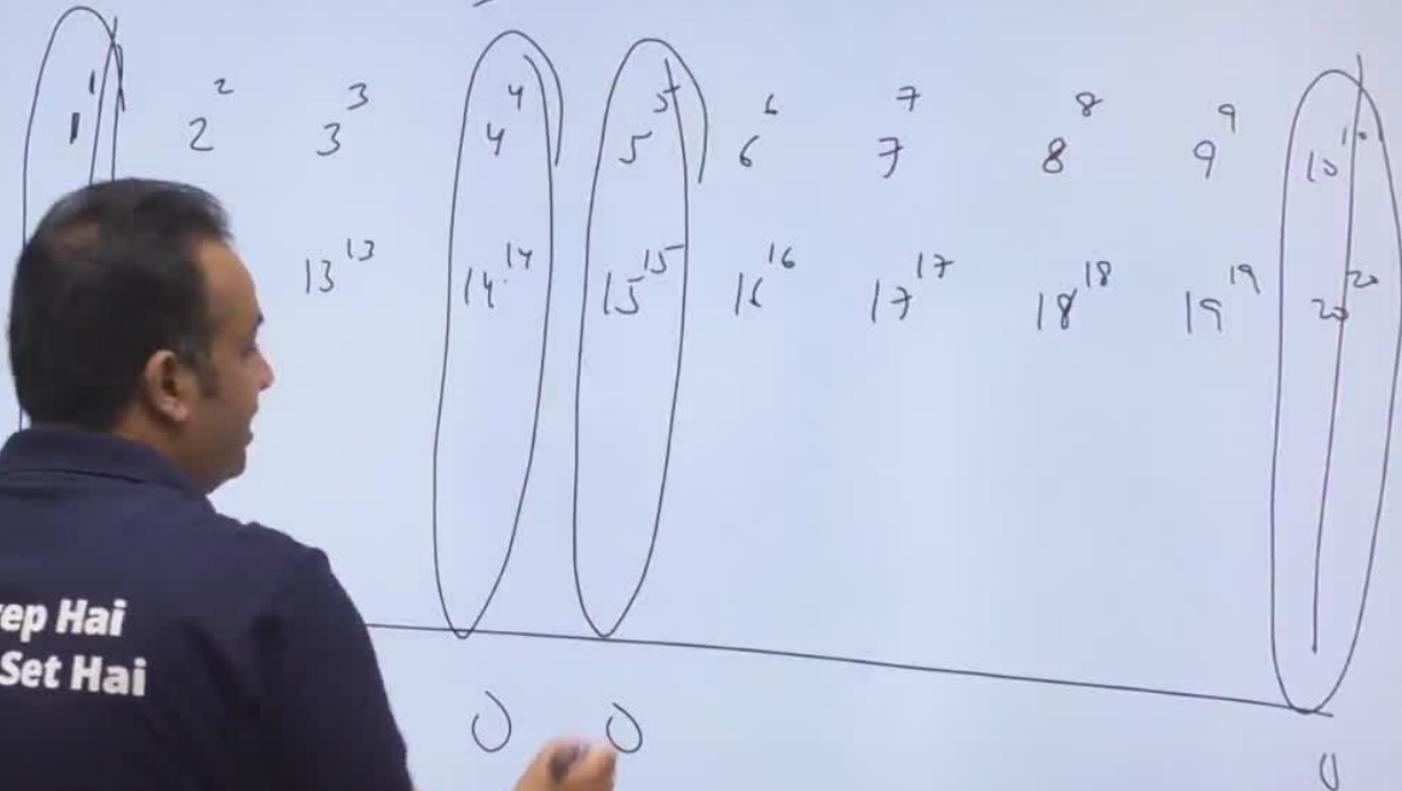
Unit digit Q

Unit digit Q17. $1^1 + 2^2 + 3^3 + 4^4 + \dots + 100^{100}$

A teacher, seen from behind, is writing numbers on a whiteboard. The numbers are arranged in two rows: the first row contains 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10; the second row contains 11, 12, 13, 14, 15, 16, 17, 18, 19, and 20. The teacher is wearing a dark polo shirt with the text "Sahi Prep Hai Toh Life Set Hai" printed on the back.

Unit digit

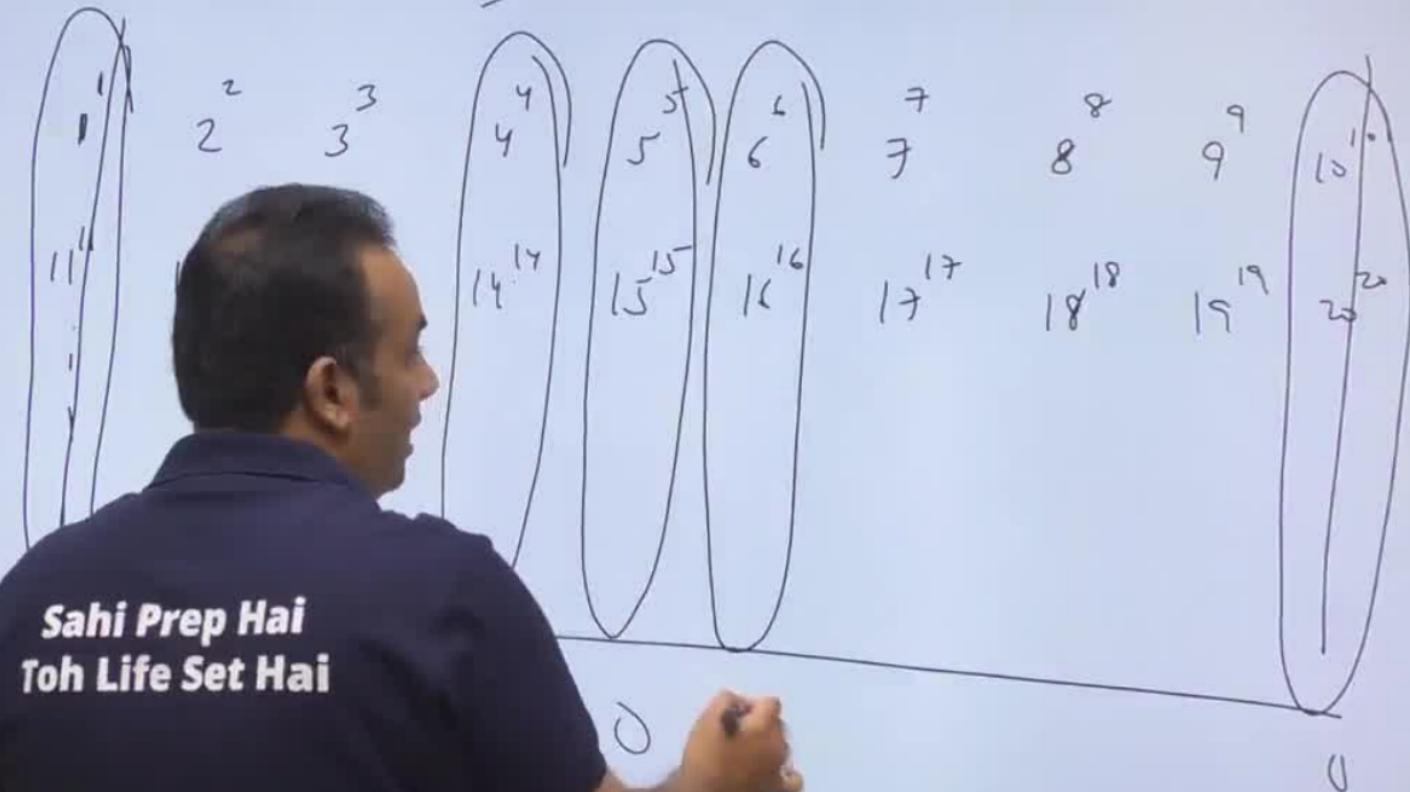
$$\text{Q17. } 1^1 + 2^2 + 3^3 + 4^4 + \dots + 100^{100}$$



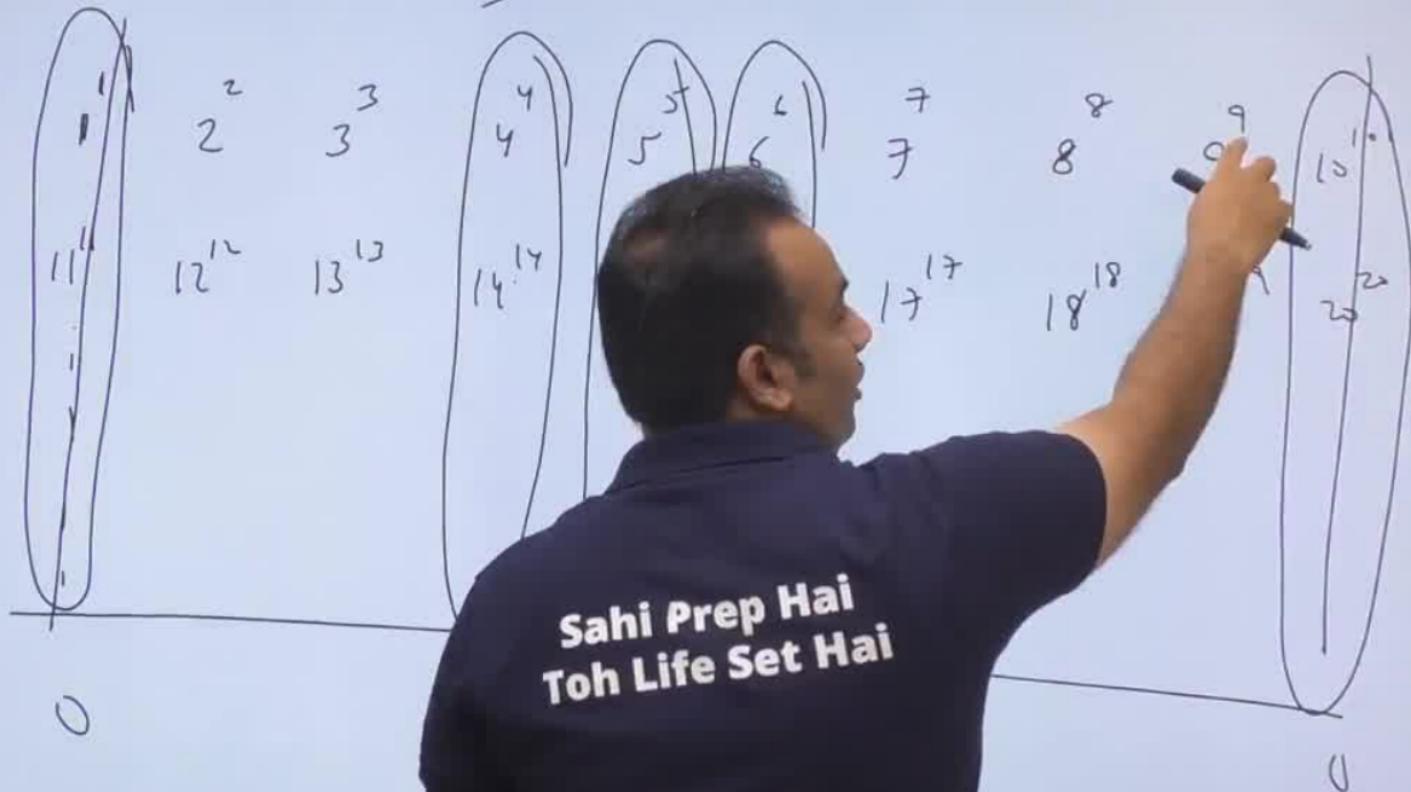
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Unit digit

$$\text{Q17. } 1^1 + 2^2 + 3^3 + 4^4 + \dots + 100^{100}$$



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Unit digitQ17. $1^1 + 2^2 + 3^3 + 4^4 + \dots + 100^{100}$ 

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From Beginning Current Slide Custom Slide Show Rehearse with Coach Set Up Hide Slide Rehearse Timings Record Slide Show Set Up Set Up

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Click to add title Click to add subtitle

Delete New slide Duplicate Layout Hide

Notes Display Settings

12:00 PM

The image shows a person from behind, wearing a dark t-shirt with the slogan "Ichi Prep Hai Life Set Hai" printed on it in white. The person is holding a black marker and is in the process of writing on a whiteboard. The whiteboard displays a Microsoft PowerPoint slide with the title "Click to add title" and the subtitle "Click to add subtitle". The slide has a light blue background and a white header bar. The Microsoft Office ribbon is visible at the top, showing tabs like File, Home, Insert, Draw, Design, Transitions, Animations, Slide Show, Review, View, MathType, and Help. The "Slide Show" tab is currently selected. The "Slide Show" ribbon group contains various options: "From Beginning", "From Current Slide", "Custom Slide Show", "Rehearse with Coach", "Set Up", "Hide Slide", "Rehearse Timings", "Record Slide Show", "Show Set Up", "Automatic", "Always Use Subtitles", "Use Presenters View", "Subtitle Settings", and "Capture & Subtitle". The status bar at the bottom right shows the time as 12:00 PM.

2²
12¹²

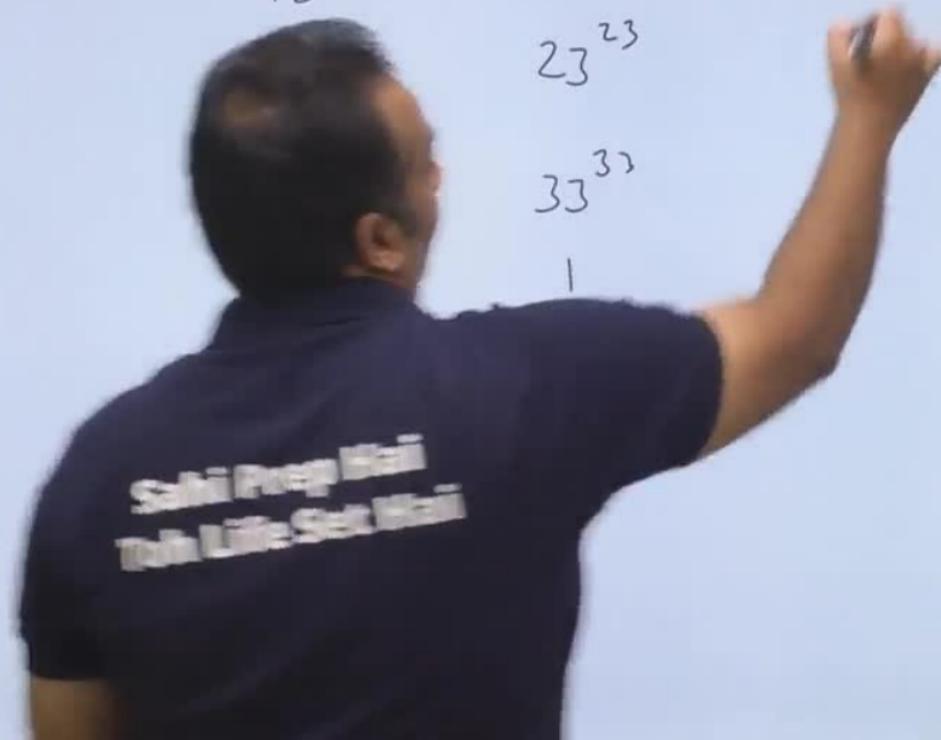
3³

13¹³

23²³

33³³

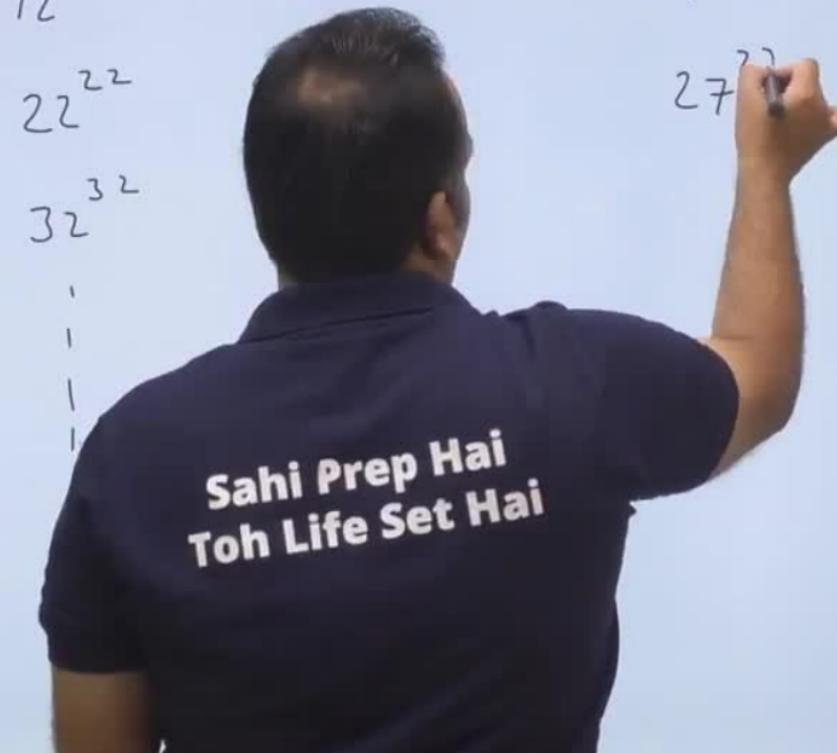
1



2²
2
12¹²
22²²
32³²

3³
13¹³

7⁷
17¹⁷
27²⁷



$$\begin{array}{ccc} & 2 & 3 \\ & 2 & 3 \\ 12 & ^{12} & 13 & ^{13} \\ 22 & ^{22} & & 27 & ^{27} \\ 32 & ^{32} & & 37 & ^{37} \\ & | & & | & \\ & | & & | & \end{array}$$

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2
2

12¹²

22²²

32³²

1

1

1

1

3³

13¹³

23²³

33³³

1

1

1

1

7⁷

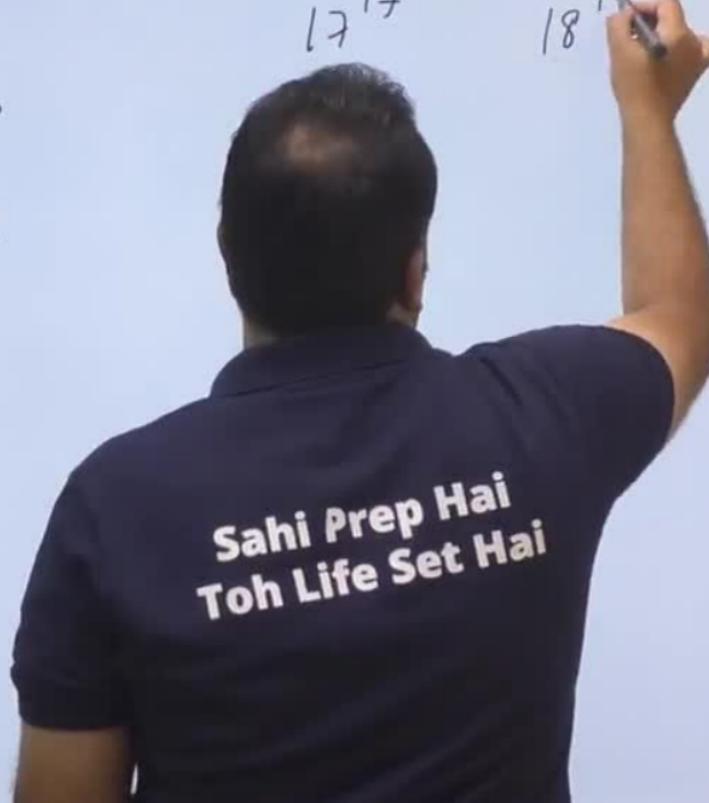
17¹⁷

7⁷

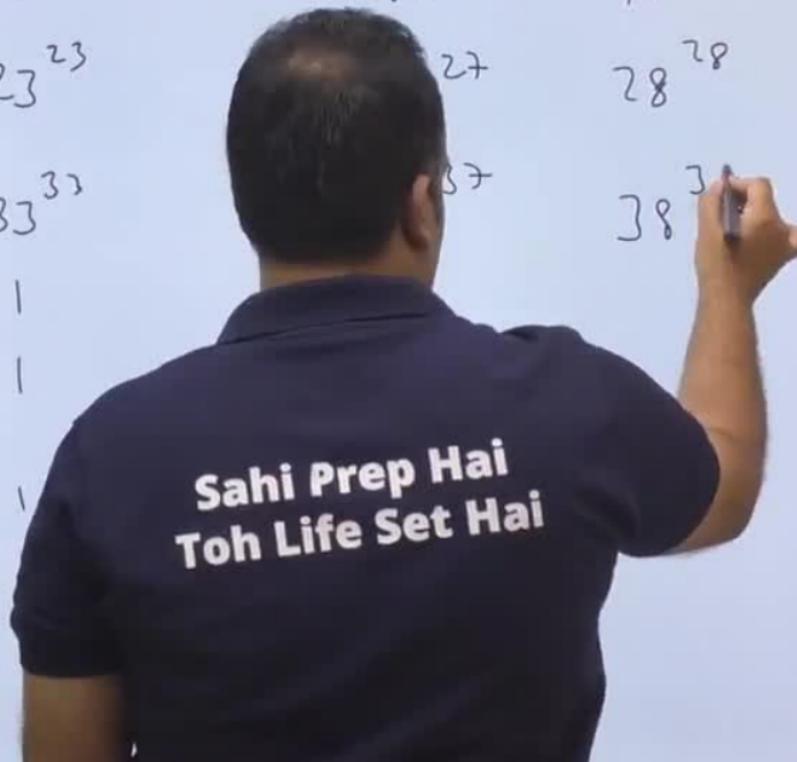
8⁸

18¹⁸

8⁸



2 3 7 8
2 13 17 18
12 23 27 28
22 33 37 38
32 32 32 32



$2^2(4)$ $3^3(?)$ 7^7 8^8 $12^{12}(6)$ $13^{13}(3)$ 17^{17} 18^{18} $22^{22}(4)$ $23^{23}(?)$ 27^{27} 28^{28} $2^{2}(?)$ $33^{33}(3)$ 37^{37} 38^{38}

|

|

|

|

|

|

|

|

|

0

$2^2(4)$ $3^3(?)$ 7^73 8^8

6

 $12^{12}(6)$ $13^{13}(3)$ $17^{17}7$ 18^{18}

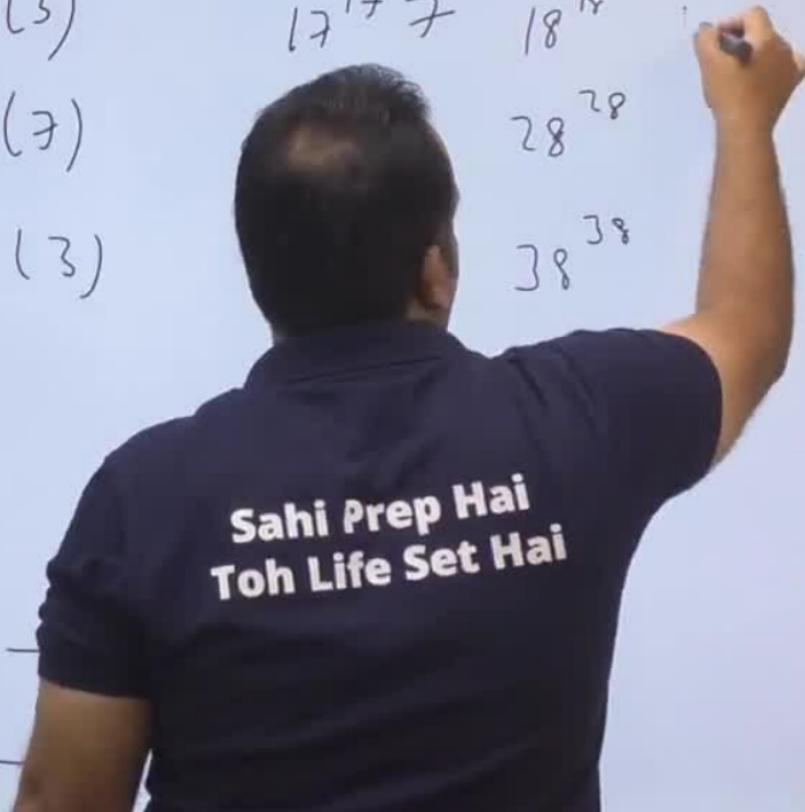
1

 $22^{22}(4)$ $23^{23}(?)$ 28^{28} $32^{32}(?)$ $33^{33}(3)$ 38^{38}

1
1
1
1

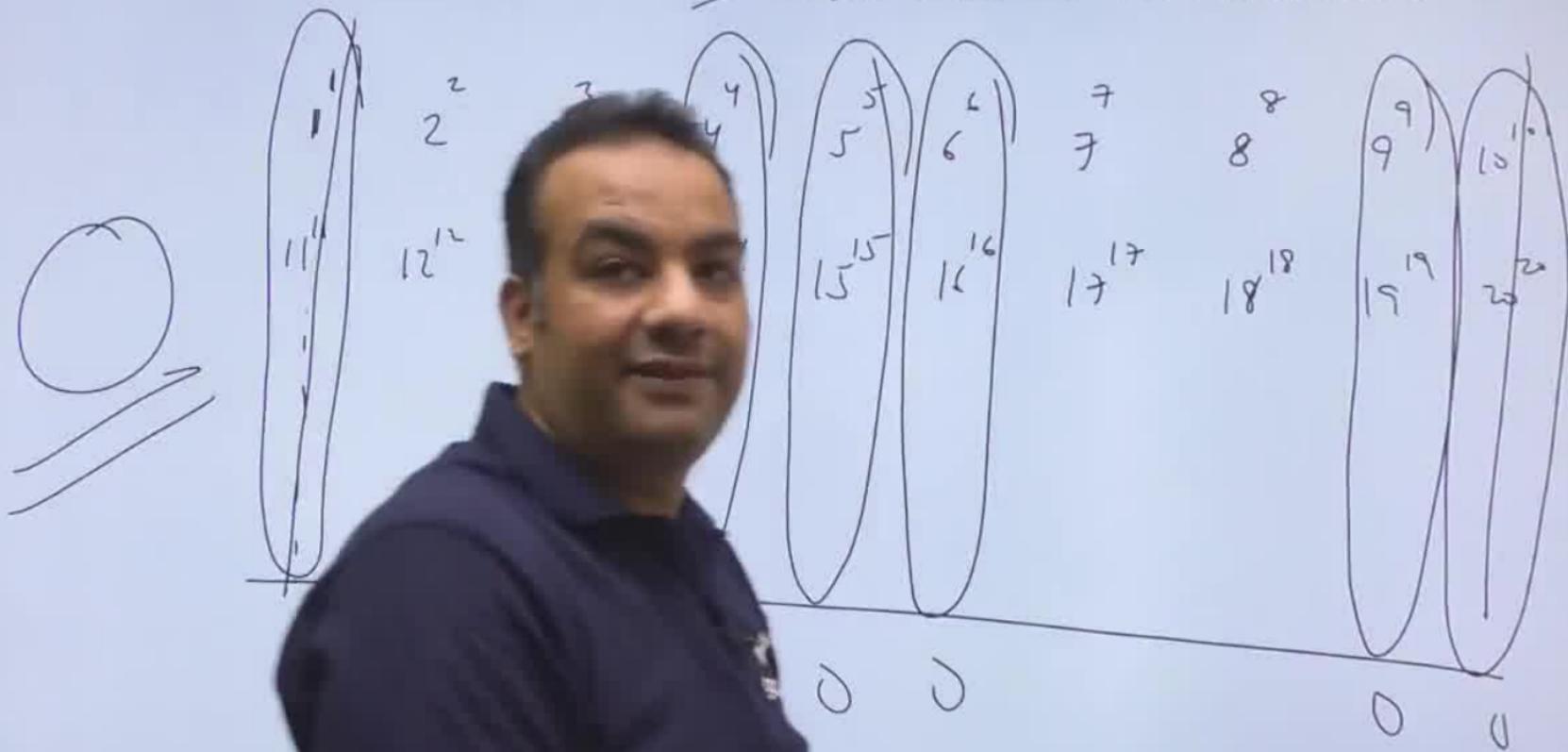
1
1
1
1

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Unit digit

$$\text{Q17. } 1^1 + 2^2 + 3^3 + 4^4 + \dots + 100^{100}$$



Q.6: Find the product of all factors of

(i) $I = 360$

(ii) $J = 784$

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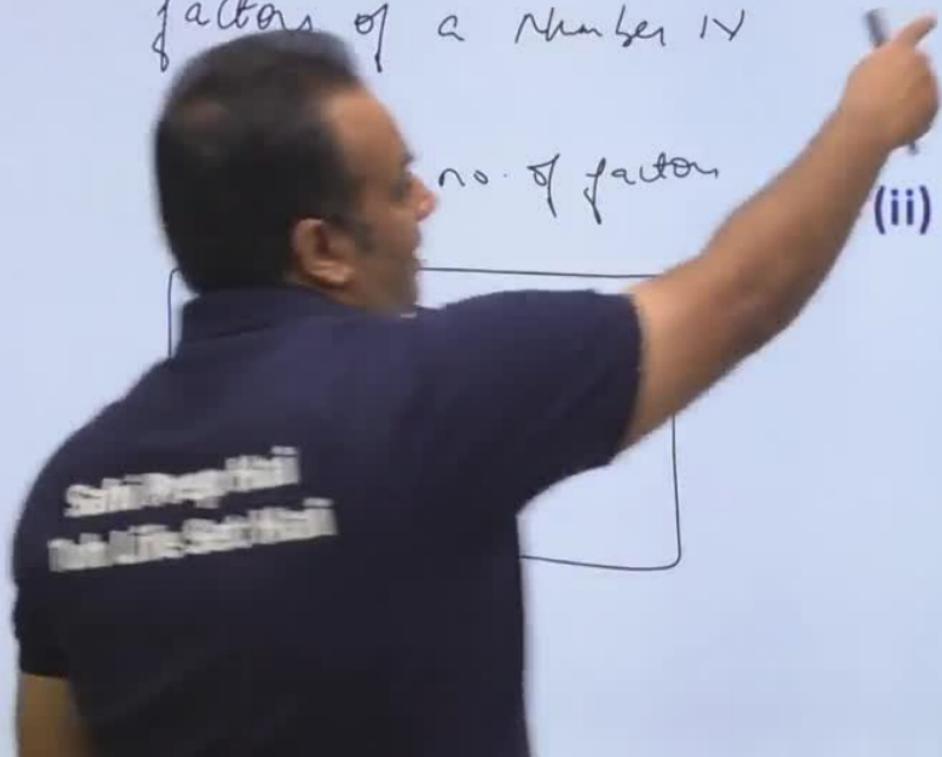
Q.6: Find the product of all factors of

Product of all the
factors of a number 14

(i) $I = 360$

(ii) $J = 784$

no. of factors



Q.6: Find the product of all factors of

Product of all the
factors of a number N

where $n \rightarrow$ no. of factors

(i) $I = 360 \Rightarrow 2^3 \cdot 3^2 \cdot 5^1$

84

$$(N)^{n/2}$$

Sahi Prep Hai
Toh Life Set Hai

Q.6: Find the product of all factors of

Product of all the
factors of a number

where $n \rightarrow n^{\text{no.}}$

(i) $I = 360 \Rightarrow 2^3 \cdot 3^2 \cdot 5^1$

(360)

(ii) $J = ?$

$(N)^n$

Sahi Prep Hai
Toh Life Set Hai

Q.6: Find the product of all factors of

Product of all the
factors of a number N

where $n \rightarrow$ no. of factors

(i) $I = 360 \Rightarrow 2^3 \cdot 3^2 \cdot 5^1$

$$(360)^{12}$$

$$J = 784$$

$$(N)^{\frac{n}{2}}$$

Sahi Prep Hai
Toh Life Set Hai

Q.6: Find the product of all factors of

Product of all the
factors of a Number n^N

where $n \rightarrow n^N$

(i) $I = 360 \Rightarrow 2^3 \cdot 3^2 \cdot 5^1$
 $(360)^{12}$ ~~12~~

(ii) $J = 784$

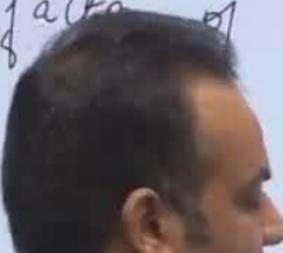
784

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Q.6: Find the product of all factors of

Product of all the
factors of a number N

no. of factors



Sahi Prep Hai
Joh Life Set Hai

(i) $I = 360 \Rightarrow 2^3 \cdot 3^2 \cdot 5^1$
 $(360)^{12}$

(ii) $J = 784$

$$784 = 2^4 \cdot 7^2$$

Q.6: Find the product of all factors of

Product of all the
factors of a number n^m

where $n \rightarrow n^m$

(i) $I = 360 \Rightarrow 2^3 \cdot 3^2 \cdot 5^1$
 $(360)^{12}$ ~~12~~

(ii) $J = 784$

$$784 = 2^4 \cdot 7^2$$

$$784$$

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Q.6: Find the product of all factors of

Product of all the
factors of a number n^k

where $n \rightarrow n^k$

(i) $I = 360 \Rightarrow 2^3 \cdot 3^2 \cdot 5^1$
 $(360)^{12}$ ~~✓~~

(ii) $J = 784$

$$784 = 2^4 \cdot 7^2$$

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Q.6: Find the product of all factors of

Product of all the
factors of a number N

where $n \rightarrow$ no. of factors

$$(i) I = 360 \Rightarrow 2^3 \cdot 3^2 \cdot 5^1$$

$$(360)^{12}$$

$$= 2^4 \cdot 7^2$$

$$28^2$$

$$(N)^{n/2}$$

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Q.6: Find the product of all factors of

Product of all the
factors of a number N

where $n \rightarrow$ no. of factors

$$(i) I = 360 \Rightarrow 2^3 \cdot 3^2 \cdot 5^1$$

$$(360)^{12}$$

(

$$2^4 \cdot 7^2$$

$$(N)^{n/2}$$

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$$(28^{21})^{1/2}$$

Q.9: Find how many factors of M are there which are perfect squares

$$M = 2^5 \cdot 3^6 \cdot 5^2$$

Refer Class video

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① In an organisation, five bells ring after 9, 18, 36
87, and 45 sec. respectively. How many times
will they ring simultaneously in 360 minute?

- (A) 41 (B) 42 (C) 43 (D) 39

9, 18, 36, 27, 45

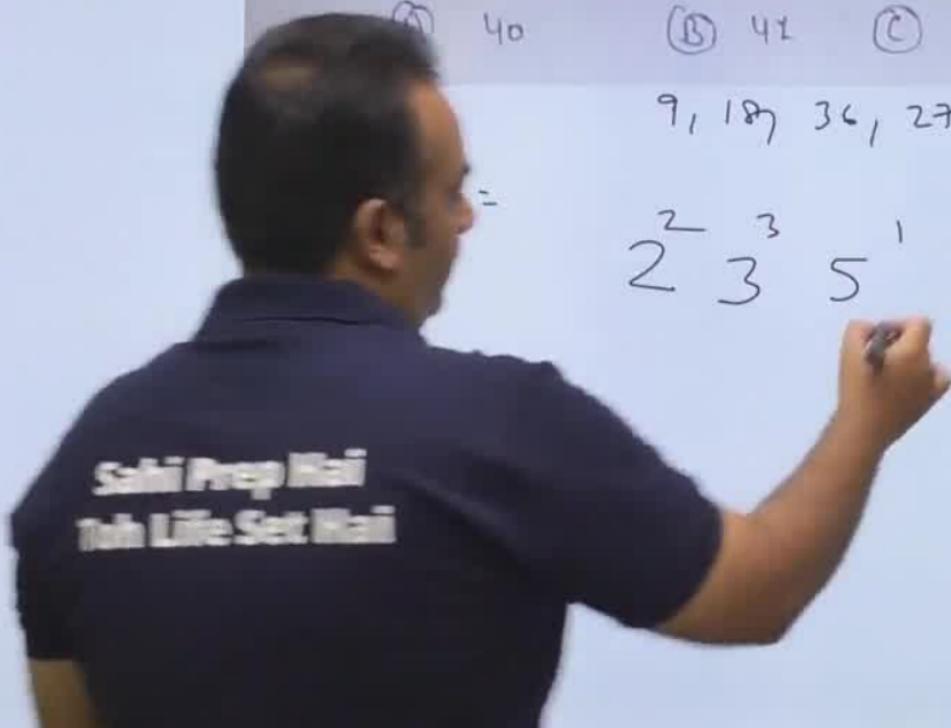
Sahi Prep Hai
Toh Life Set Hai

① In an organisation, five bells ring after 9, 18, 36
87, and 45 sec. respectively. How many times
will they ring simultaneously in 360 minute?

- (A) 40 (B) 42 (C) 42 (D) 39

9, 18, 36, 27, 45

$$= \begin{matrix} 2 & 3 & 5 \\ 2 & 3 & 5 \end{matrix}$$



Gagandeep Singh

① In an organisation, five bells ring after 9, 18, 36
87, and 45 sec. respectively. How many times
will they ring simultaneously in 360 minute?

- (A) 45 (B) 42 (C) 42 (D) 39

18, 36, 27, 45

LCM

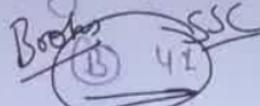
$$\begin{array}{r} 3 \\ 3 \quad 5 \\ \hline 54 \end{array}$$

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Gagandeep Singh

① In an organisation, five bells ring after 9, 18, 36, 87, and 45 sec. respectively. How many times will they ring simultaneously in 360 minute?

(A) 40



(C) 42

(D) 39

9, 18, 36, 27, 45

LCM =

$$2^2 \cdot 3^3 \cdot 5^1 = 540 \text{ sec (9 min)}$$

$$\frac{360}{54} \rightarrow \underline{40 \text{ Times}}$$

Smaller Bigger

32 Teeth

- ② There are two gears in a mechanical system which are connect in contact. There are 32 teeth in small gear and 36 teeth in bigger gear. If bigger gear completes 64 cycle in 1 second. Then in many times two particular touch each other in 10 hours?

Smaller Bigger
32 Teeth 36 Teeth

64 cycles/sec

10 hours

Q. There are two gears in a mechanical system which are connect in contact. There are 32 teeth in small gear and 36 teeth in bigger gear. If bigger gear completes 64 cycle in 1 second, then how many times two particular teeth touch each other in 10 hours?

Smaller Bigger
32 Teeth 36 Teeth

64 cycles/s

10 hours

- ② There are two gears in a mechanical system which are connect in contact. There are 32 teeth in small gear and 36 teeth in bigger gear. If bigger gear completes 64 cycle in 1 second in many other in 10 hours?

$$\eta_1 \cdot t_1 = \eta_2$$

Sahi Prep Hai
Toh Life Set Hai

Smaller Bigger

32 Teeth 36 Teeth

x 64 cyl

10 hours

② There are two gears in a mechanical system which are connected in contact. There are 32 teeth in small gear and 36 teeth in bigger gear. If bigger gear completes 64 cycles in 1 second then in many other in 10 hours?

$$n_1 \cdot t_1 = n_2 \cdot t_2$$

$$32 \cdot n =$$

**Sahi Prep Hai
Toh Life Set Hai**

Smaller Bigger

32 Teeth 36 Teeth

\times 64 cycles/s

10 hours

② There are two gears in a mechanical system which are connected in contact. There are 32 teeth in small gear and 36 teeth in bigger gear. If bigger gear completes 64 cycle in 1 second in many frames two particular teeth touch each other in 10 hours?

$$n_1 \cdot t_1 = n_2 \cdot t_2$$

$$32 \cdot n = 36 \cdot 64$$

*Sahi Prep Hai
Toh Life Set Hai*

Smaller Bigger
 32 Teeth 36 Teeth
 \times 64 cycles

② There are two gears in a mechanical system which are connect in contact. There are 32 teeth in small gear and 36 teeth in bigger gear. If bigger gear completes 64 cycle in 1 second in many other in 10 hours?

$$n_1 \cdot t_1 = n_2 \cdot t_2$$

$$32 \cdot n = 36 \cdot 64$$

$$n = ?$$

**Sahi Prep Hai
Toh Life Set Hai**

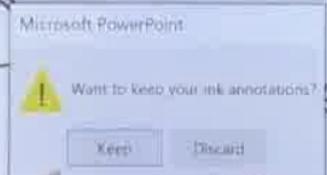
Smaller Bigger

32 Teeth 36 Teeth

~~x~~ Cycles/sec
64 cycles/sec

10 hours

② There are two gears in a mechanical system which are connected in contact. There are 32 teeth in small gear and 36 teeth in bigger gear. If bigger gear completes 64 cycle in 1 second. Then in many hours two particular teeth touch each other in 10 hours?



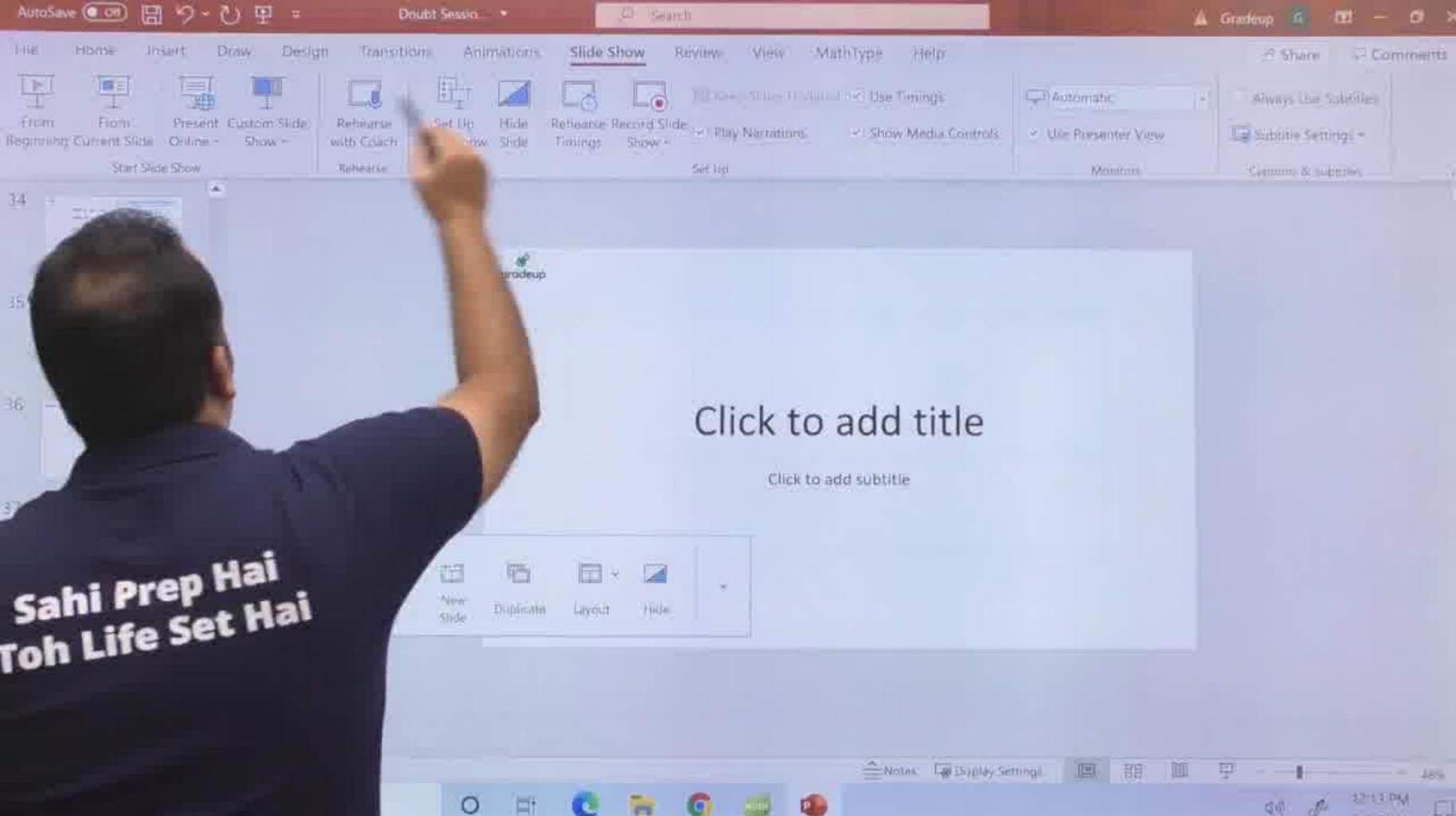
$$z_1 = n_2 \cdot t_2$$

$$\cancel{z_1} n = 36 \cdot \cancel{t_2}$$

$$n = 72$$

$$\cancel{z_1} : 64$$

$$9 : 8$$



Speed



Speeds

9 : 8

alee

Bigg

Sahi Prep Hai
Toh Life Set Hai

Speeds

9 : 8

Smaller

9

Meeting

Sahi Prep Hai
Toh Life Set Hai

Speeds

9 : 8

Smaller

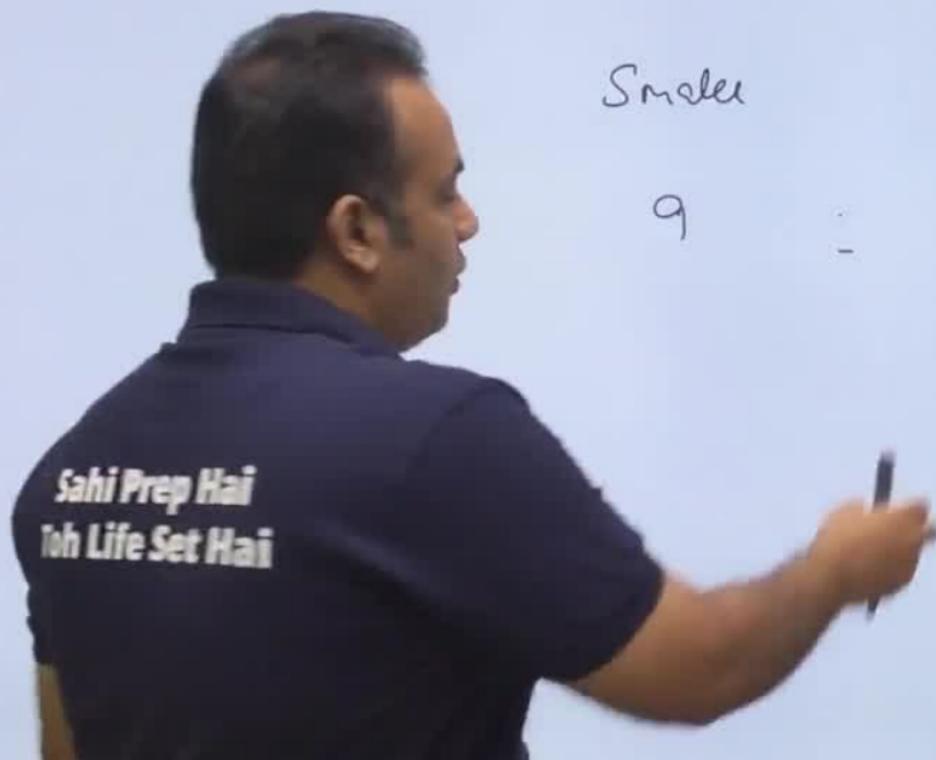
Bigger

Meeting

9

8

18



Speeds 9 : 8

Smaller

9

ges

Meeting

1st

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Toh Life Set Hai**

Q18 The HCF (GCD) of a, b is 12, a, b are positive integers and $a > b > 12$. The smallest values of (a, b) are respectively. (A) 12, 24 (B) 24, 12 (C) 24, 36 (D) 36, 24

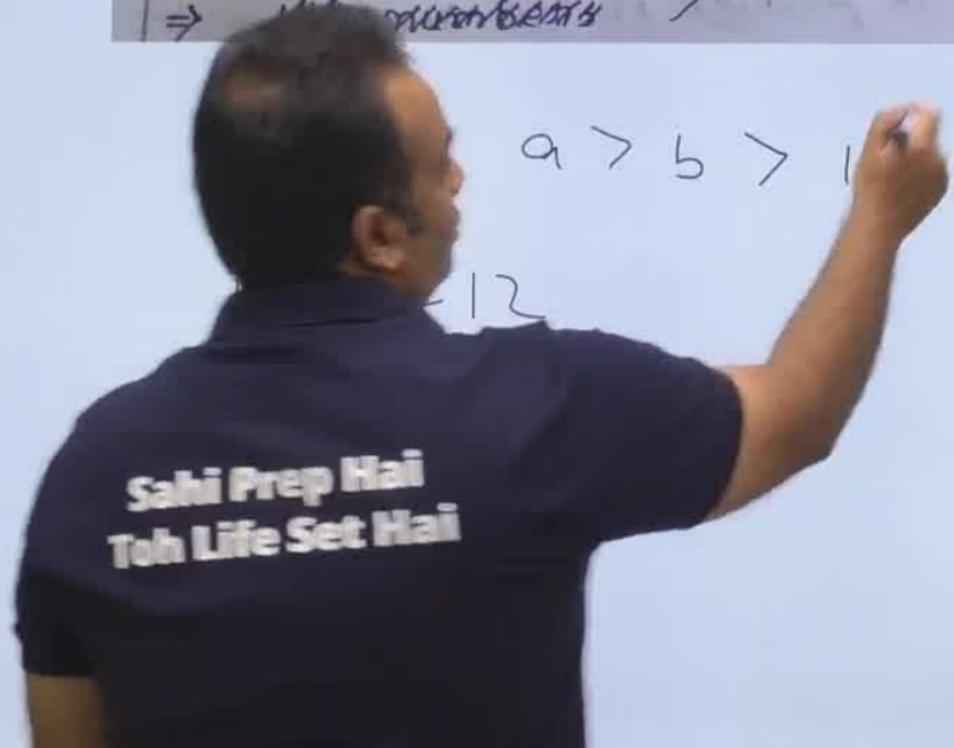
\Rightarrow ~~12, 24, 36, 48, 60, 72, 84, 96, 108, 120, 132, 144, 156, 168, 180, 192, 204, 216, 228, 240, 252, 264, 276, 288, 300, 312, 324, 336, 348, 360, 372, 384, 396, 408, 420, 432, 444, 456, 468, 480, 492, 504, 516, 528, 540, 552, 564, 576, 588, 600, 612, 624, 636, 648, 660, 672, 684, 696, 708, 720, 732, 744, 756, 768, 780, 792, 804, 816, 828, 840, 852, 864, 876, 888, 896, 908, 920, 932, 944, 956, 968, 980, 992, 1004, 1016, 1028, 1040, 1052, 1064, 1076, 1088, 1096, 1108, 1120, 1132, 1144, 1156, 1168, 1180, 1192, 1204, 1216, 1228, 1240, 1252, 1264, 1276, 1288, 1296, 1308, 1320, 1332, 1344, 1356, 1368, 1380, 1392, 1404, 1416, 1428, 1440, 1452, 1464, 1476, 1488, 1496, 1508, 1520, 1532, 1544, 1556, 1568, 1580, 1592, 1604, 1616, 1628, 1640, 1652, 1664, 1676, 1688, 1696, 1708, 1720, 1732, 1744, 1756, 1768, 1780, 1792, 1804, 1816, 1828, 1840, 1852, 1864, 1876, 1888, 1896, 1908, 1920, 1932, 1944, 1956, 1968, 1980, 1992, 2004, 2016, 2028, 2040, 2052, 2064, 2076, 2088, 2096, 2108, 2120, 2132, 2144, 2156, 2168, 2180, 2192, 2204, 2216, 2228, 2240, 2252, 2264, 2276, 2288, 2296, 2308, 2320, 2332, 2344, 2356, 2368, 2380, 2392, 2404, 2416, 2428, 2440, 2452, 2464, 2476, 2488, 2496, 2508, 2520, 2532, 2544, 2556, 2568, 2580, 2592, 2604, 2616, 2628, 2640, 2652, 2664, 2676, 2688, 2696, 2708, 2720, 2732, 2744, 2756, 2768, 2780, 2792, 2804, 2816, 2828, 2840, 2852, 2864, 2876, 2888, 2896, 2908, 2920, 2932, 2944, 2956, 2968, 2980, 2992, 3004, 3016, 3028, 3040, 3052, 3064, 3076, 3088, 3096, 3108, 3120, 3132, 3144, 3156, 3168, 3180, 3192, 3204, 3216, 3228, 3240, 3252, 3264, 3276, 3288, 3296, 3308, 3320, 3332, 3344, 3356, 3368, 3380, 3392, 3404, 3416, 3428, 3440, 3452, 3464, 3476, 3488, 3496, 3508, 3520, 3532, 3544, 3556, 3568, 3580, 3592, 3604, 3616, 3628, 3640, 3652, 3664, 3676, 3688, 3696, 3708, 3720, 3732, 3744, 3756, 3768, 3780, 3792, 3804, 3816, 3828, 3840, 3852, 3864, 3876, 3888, 3896, 3908, 3920, 3932, 3944, 3956, 3968, 3980, 3992, 4004, 4016, 4028, 4040, 4052, 4064, 4076, 4088, 4096, 4108, 4120, 4132, 4144, 4156, 4168, 4180, 4192, 4204, 4216, 4228, 4240, 4252, 4264, 4276, 4288, 4296, 4308, 4320, 4332, 4344, 4356, 4368, 4380, 4392, 4404, 4416, 4428, 4440, 4452, 4464, 4476, 4488, 4496, 4508, 4520, 4532, 4544, 4556, 4568, 4580, 4592, 4604, 4616, 4628, 4640, 4652, 4664, 4676, 4688, 4696, 4708, 4720, 4732, 4744, 4756, 4768, 4780, 4792, 4804, 4816, 4828, 4840, 4852, 4864, 4876, 4888, 4896, 4908, 4920, 4932, 4944, 4956, 4968, 4980, 4992, 5004, 5016, 5028, 5040, 5052, 5064, 5076, 5088, 5096, 5108, 5120, 5132, 5144, 5156, 5168, 5180, 5192, 5204, 5216, 5228, 5240, 5252, 5264, 5276, 5288, 5296, 5308, 5320, 5332, 5344, 5356, 5368, 5380, 5392, 5404, 5416, 5428, 5440, 5452, 5464, 5476, 5488, 5496, 5508, 5520, 5532, 5544, 5556, 5568, 5580, 5592, 5604, 5616, 5628, 5640, 5652, 5664, 5676, 5688, 5696, 5708, 5720, 5732, 5744, 5756, 5768, 5780, 5792, 5804, 5816, 5828, 5840, 5852, 5864, 5876, 5888, 5896, 5908, 5920, 5932, 5944, 5956, 5968, 5980, 5992, 6004, 6016, 6028, 6040, 6052, 6064, 6076, 6088, 6096, 6108, 6120, 6132, 6144, 6156, 6168, 6180, 6192, 6204, 6216, 6228, 6240, 6252, 6264, 6276, 6288, 6296, 6308, 6320, 6332, 6344, 6356, 6368, 6380, 6392, 6404, 6416, 6428, 6440, 6452, 6464, 6476, 6488, 6496, 6508, 6520, 6532, 6544, 6556, 6568, 6580, 6592, 6604, 6616, 6628, 6640, 6652, 6664, 6676, 6688, 6696, 6708, 6720, 6732, 6744, 6756, 6768, 6780, 6792, 6804, 6816, 6828, 6840, 6852, 6864, 6876, 6888, 6896, 6908, 6920, 6932, 6944, 6956, 6968, 6980, 6992, 7004, 7016, 7028, 7040, 7052, 7064, 7076, 7088, 7096, 7108, 7120, 7132, 7144, 7156, 7168, 7180, 7192, 7204, 7216, 7228, 7240, 7252, 7264, 7276, 7288, 7296, 7308, 7320, 7332, 7344, 7356, 7368, 7380, 7392, 7404, 7416, 7428, 7440, 7452, 7464, 7476, 7488, 7496, 7508, 7520, 7532, 7544, 7556, 7568, 7580, 7592, 7604, 7616, 7628, 7640, 7652, 7664, 7676, 7688, 7696, 7708, 7720, 7732, 7744, 7756, 7768, 7780, 7792, 7804, 7816, 7828, 7840, 7852, 7864, 7876, 7888, 7896, 7908, 7920, 7932, 7944, 7956, 7968, 7980, 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9944, 9956, 9968, 9980, 9992, 10004, 10016, 10028, 10040, 10052, 10064, 10076, 10088, 10096, 10108, 10120, 10132, 10144, 10156, 10168, 10180, 10192, 10204, 10216, 10228, 10240, 10252, 10264, 10276, 10288, 10296, 10308, 10320, 10332, 10344, 10356, 10368, 10380, 10392, 10404, 10416, 10428, 10440, 10452, 10464, 10476, 10488, 10496, 10508, 10520, 10532, 10544, 10556, 10568, 10580, 10592, 10604, 10616, 10628, 10640, 10652, 10664, 10676, 10688, 10696, 10708, 10720, 10732, 10744, 10756, 10768, 10780, 10792, 10804, 10816, 10828, 10840, 10852, 10864, 10876, 10888, 10896, 10908, 10920, 10932, 10944, 10956, 10968, 10980, 10992, 11004, 11016, 11028, 11040, 11052, 11064, 11076, 11088, 11096, 11108, 11120, 11132, 11144, 11156, 11168, 11180, 11192, 11204, 11216, 11228, 11240, 11252, 11264, 11276, 11288, 11296, 11308, 11320, 11332, 11344, 11356, 11368, 11380, 11392, 11404, 11416, 11428, 11440, 11452, 11464, 11476, 11488, 11496, 11508, 11520, 11532, 11544, 11556, 11568, 11580, 11592, 11604, 11616, 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14992, 15004, 15016, 15028, 15040, 15052, 15064, 15076, 15088, 15096, 15108, 15120, 15132, 15144, 15156, 15168, 15180, 15192, 15204, 15216, 15228, 15240, 15252, 15264, 15276, 15288, 15296, 15308, 15320, 15332, 15344, 15356, 15368, 15380, 15392, 15404, 15416, 15428, 15440, 15452, 15464, 15476, 15488, 15496, 15508, 15520, 15532, 15544, 15556, 15568, 15580, 15592, 15604, 15616, 15628, 15640, 15652, 15664, 15676, 15688, 15696, 15708, 15720, 15732, 15744, 15756, 15768, 15780, 15792, 15804, 15816, 15828, 15840, 15852, 15864, 15876, 15888, 15896, 15908, 15920, 15932, 15944, 15956, 15968, 15980, 15992, 16004, 16016, 16028, 16040, 16052, 16064, 16076, 16088, 16096, 16108, 16120, 16132, 16144, 16156, 16168, 16180, 16192, 16204, 16216, 16228, 16240, 16252, 16264, 16276, 16288, 16296, 16308, 16320, 16332, 16344, 16356, 16368, 16380, 16392, 16404, 16416, 16428, 16440, 16452, 16464, 16476, 16488, 16496, 16508, 16520, 16532, 16544, 16556, 16568, 16580, 16592, 16604, 16616, 16628, 16640, 16652, 16664, 16676, 16688, 16696, 16708, 16720, 16732, 16744, 16756, 16768, 16780, 16792, 16804, 16816, 16828, 16840, 16852, 16864, 16876, 16888, 16896, 16908, 16920, 16932, 16944, 16956, 16968, 16980, 16992, 17004, 17016, 17028, 17040, 17052, 17064, 17076, 17088, 17096, 17108, 17120, 17132, 17144, 17156, 17168, 17180, 17192, 17204, 17216, 17228, 17240, 17252, 17264, 17276, 17288, 17296, 17308, 17320, 17332, 17344, 17356, 17368, 17380, 17392, 17404, 17416, 17428, 17440, 17452, 17464, 17476, 17488, 17496, 17508, 17520, 17532, 17544, 17556, 17568, 17580, 17592, 17604, 17616, 17628, 17640, 17652, 17664, 17676, 17688, 17696, 17708, 17720, 17732, 17744, 17756, 17768, 17780, 17792, 17804, 17816, 17828, 17840, 17852, 17864, 17876, 17888, 17896, 17908, 17920, 17932, 17944, 17956, 17968, 17980, 17992, 18004, 18016, 18028, 18040, 18052, 18064, 18076, 18088, 18096, 18108, 18120, 18132, 18144, 18156, 18168, 18180, 18192, 18204, 18216, 18228, 18240, 18252, 18264, 18276, 18288, 18296, 18308, 18320, 18332, 18344, 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20040, 20052, 20064, 20076, 20088, 20096, 20108, 20120, 20132, 20144, 20156, 20168, 20180, 20192, 20204, 20216, 20228, 20240, 20252, 20264, 20276, 20288, 20296, 20308, 20320, 20332, 20344, 20356, 20368, 20380, 20392, 20404, 20416, 20428, 20440, 20452, 20464, 20476, 20488, 20496, 20508, 20520, 20532, 20544, 20556, 20568, 20580, 20592, 20604, 20616, 20628, 20640, 20652, 20664, 20676, 20688, 20696, 20708, 20720, 20732, 20744, 20756, 20768, 20780, 20792, 20804, 20816, 20828, 20840, 20852, 20864, 20876, 20888, 20896, 20908, 20920, 20932, 20944, 20956, 20968, 20980, 20992, 21004, 21016, 21028, 21040, 21052, 21064, 21076, 21088, 21096, 21108, 21120, 21132, 21144, 21156, 21168, 21180, 21192, 21204, 21216, 21228, 21240, 21252, 21264, 21276, 21288, 21296, 21308, 21320, 21332, 21344, 21356, 21368, 21380, 21392, 21404, 21416, 21428, 21440, 21452, 21464, 21476, 21488, 21496, 21508, 21520, 21532, 21544, 21556, 21568, 21580, 21592, 21604, 21616, 21628, 21640, 21652, 21664, 21676, 21688, 21696, 21708, 21720, 21732, 21744, 21756, 21768, 21780, 21792, 21804, 21816, 21828, 21840, 21852, 21864, 21876, 21888, 21896, 21908, 21920, 21932, 21944, 21956, 21968, 21980, 21992, 22004, 22016, 22028, 22040, 22052, 22064,~~

18 The HCF (GCD) of a, b is 12, a, b are positive integers and $a > b > 12$. The smallest values of (a, b) are respectively. ① 12, 24 ② 24, 12 ③ 24, 36 ④ 36, 24

\Rightarrow ~~all numbers~~

$$a > b > 1$$

$$-12$$



Puja Adhikari

18 The HCF (GCD) of a, b is 12, a, b are positive integers and $a > b > 12$. The smallest values of (a, b) are respectively. (A) 12, 24 (B) 24, 12 (C) 24, 36 (D) 36, 24
⇒ ~~KEN, numbers~~ ~~X~~ ~~X~~ ~~X~~ ~~=~~

$$a > b > 12$$

$$\text{HCF} = 12$$

- 19 Let x be the smallest number which when added to 2000 makes the resulting number divisible by 12, 16, 18 & 21. The sum of the digits of x is: ④ 6 ⑤ 5 ⑥ 7 ⑦ 4
=> 12000

(24, 12)

 $x \rightarrow$

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- 19 Let x be the smallest number which when added to 2000 makes the resulting number divisible by 12, 16, 18 & 21. The sum of the digits of x is: ④ 6 ③ 5 ② 7 ① 4
 $\Rightarrow (2000 + x)$

$$2000 + x \rightarrow \text{div by } 12, 16, 18, 21$$

11 digits

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- Ques 19 Let x be the smallest number which when added to 2000 makes the resulting number divisible by 12, 16, 18 & 21. The sum of the digits of x is: ④ 6 ⑤ 5 ⑥ 7 ⑦ 4

Ans 15

Ans 15

=>

Sum of digits

of

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$$+ \textcircled{x}$$



div by 12, 16

$$\textcircled{18} \textcircled{21}$$

div by 9

8. $20^{2004} + 16^{2004} - 3^{2004} - 1^{2004}$ is divisible by

- (A) 285 (B) 323 (C) 391 (D) All of these.

D

i
ai

20 How many 5 digit numbers of the form $xxxyx$ is/are divisible by 33?

- (A) 1 (B) 3 (C) 5 (D) Infinite. (3)

Do

Find HCF of $3^{3^{3^{3^3}}} + 1$ & $3^{3^{3^4}} + 1$

D



The least number which when divided by 16, 18, 20 and 25 leaves 4 as remainder in each case but when divided by 7 leaves no remainder is

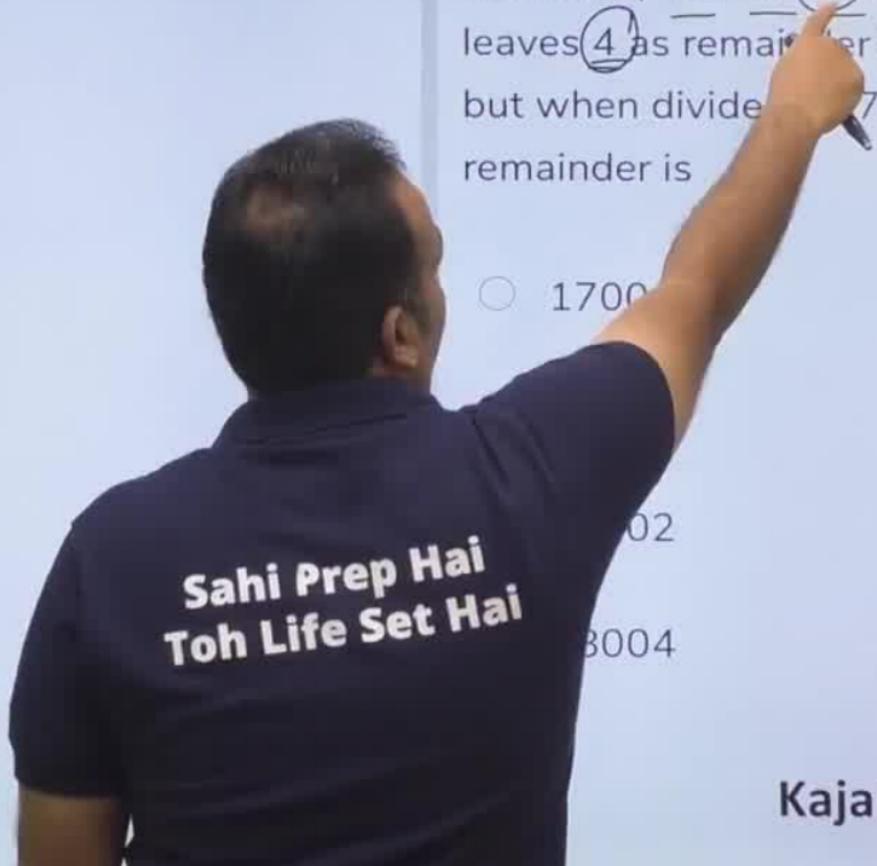
- 17004
- 18000
- 18002
- 18004

The least number which when divided by 16, 18, 20 and 25 leaves 4 as remainder in each case but when divided by 7 leaves no remainder is

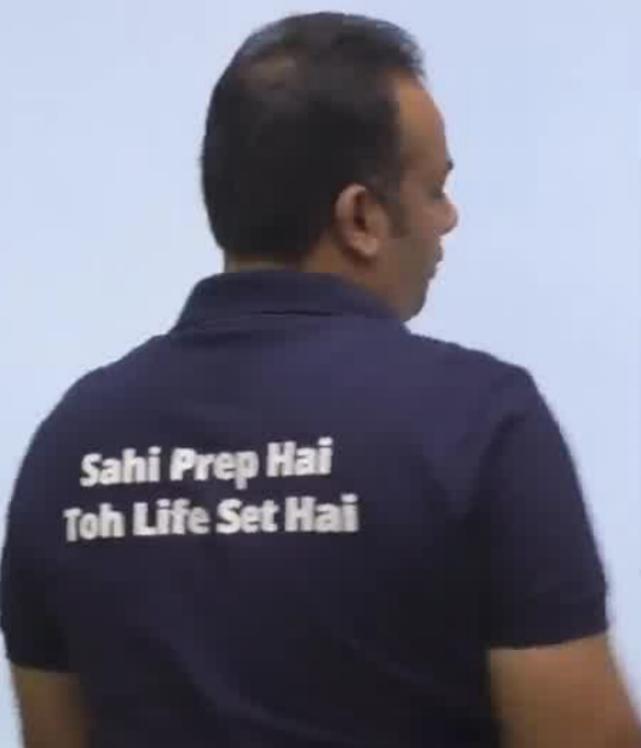
1700

02

3004



Kajal



The least number which when divided by 16, 18, 20 and 25 leaves 4 as remainder in each case but when divided by 7 leaves no remainder is

- 17004
- 18000
- 18002
- 18004

Kajal

1. Sir I know that we add divisor to negative remainder that make it positive and less than divisor, however what is the actual maths concept behind it?



Shubhendu

Which of the following is the largest 4-digit number which can be added to 7891 in order to make the derived number divisible by each of 7, 11, 12, 27, and 28.

A 9123

B 9383

C 8753

D None of these

CORRECT

Alfia

15. Find the HCF of :

$$(3^{3^{233}} + 1) \text{ and } (3^{3^{234}} + 1)$$

14. Let x be the least number, which when divided by 5, 6, 7 and 8 leaves a remainder 3 in each case but when divided by 9 leaves remainder 0. The sum of digits of x is

- (A) 24
- (B) 21
- (C) 22
- (D) 18

What is the remainder when we divide

$$(432^{35} + 23^{35}) \text{ by } 35?$$

A 4

B 7

C 0
SKIPPED

D 9

Prince sahani

$$1^1 + 2^2 + 3^3 + 4^4 + \dots + 100^{100}$$

Find unit digit
in divisible by



Gaurav Kumar

Q. When an integer P is divided by 9, the remainder is 4. What will be the remainder if $5P$ is divided by 9?

Ans. 2



Srinivas

1 What is the highest power of 4 in
100?
In each case the same remainder? 70



Q11. L.C.M and ratio of four numbers are 630 and 2 : 3 : 5 : 7 respectively. The difference between the greatest and least number is

- (A) 6 (B) 14 (C) 15 (D) 21



The H.C.F of two polynomials $f(x) = (x-1)$
 $(x^2 - x - 6)$ and $g(x) = (x-2)(k^2 x^2 - 1)$ is
 $(x-1)$. Which of the following can be the
value of k ?

0

2

-1

-2

Q.8: Find how many factors of L are there which are multiple of 20

$$L = 2^5 \cdot 3^2 \cdot 5^3$$



Keshav kumar

Q) The maximum value of F in the following equation,
 $5E9 + 2F8 + 3G7 = 1114$, where E, F, G each
stands for any digit.

Q.1
$$\begin{aligned} & [(10^3 - 1^3) + (99^3 - 9^3) + (98^3 - 8^3) \\ & + (97^3 - 7^3) + (96^3 - 6^3) + (95^3 - 5^3) + \\ & (94^3 - 4^3) + (93^3 - 3^3) + (92^3 - 2^3) + (91^3 - 1^3)] \end{aligned}$$



Nikhil

Q.4 Find product of divisors of 7744.



Q.1: Find the number of factors of

(i) $A = 280$

(ii) $B = 2^3 \cdot 3^8 \cdot 5^4$

(iii) $C = 8^9 \cdot 9^8$



Student 1

Conversion of a Recurring decimal in p/q form.

E.g. $x = 0.2353535\dots$

$$10X = 2.353535\dots \quad (1)$$

$$100X = 23.53535\dots$$

$$1000X = 235.3535\dots \quad (2)$$

Subtract (1) from (2)

$$990x = 233$$

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

Sir I find these two topics were left from "Classification of Numbers"

14. Let x be the least number, which when divided by 5, 6, 7 and 8 leaves a remainder 3 in each case but when divided by 9 leaves remainder 0. The sum of digits of x is

- (A) 24
- (B) 21
- (C) 22
- (D) 18



Prathyusha

10. The sum of two numbers is 36 and their HCF and LCM are 3 and 105 respectively. The sum of the reciprocals of two numbers.

(A) 5
(B) 5

(C) $3/25$
(D) $2/25$





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