

NUMBER SYSTEM

संख्या पद्धति



@Ravi.1 20 hours ago

Nice session 🙌

3 Reply



@surbhisingha7315 19 hours ago

Homework question answer 🤝 0000 really sir esa session se hamare concept clear ho rha h

1 Reply

• 1 reply



@user-uz9le1nh6i 6 hours ago

ANS=0

THQ SO MUCH SIR

APKI CLASS HAME BAHUT ACHHI LAGTI HAI

BUT KAL SE APKI CLASS KI TIMING BADH GAYI HE ISI KI VAJAH SE ME APKI PURI CLASS NAHI LE ...

Read more

1 Reply



@laxminarayan0933 16 hours ago

Sir question bhi slove karwaye exam pattern se

1 Reply



@laxminarayan0933 16 hours ago

Sir question bhi slove karwaye exam pattern se

1 Reply



@subhamoyghosh8498 5 hours ago

Hw ans 0

1 Reply



@aishikaghosh9030 20 hours ago

Ans- 0

1 Reply

• 1 reply



@Ravi.1 20 hours ago

0

2 Reply

• 1 reply



@zikrayasmeen4058 19 hours ago

0

1 Reply



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SSC CHSL 2022-23



MATHS

NUMBER SYSTEM

NUMBER OF ZEROS, UNIT DIGIT

BY SUNIL MAHENDRAS



LIVE | 08:30 PM



lowest even = 2

" odd =

Composite (811521) = 4

" prime = 2

" perfect = 6

" 100 = 25

" 100 = 46

" 100 prime = 1060

" 80 prime = 328

Divisibility Rules (विभाज्यकता नियम)

Divisibility by 2 :- Unit place is 0 or even number

2 से विभाज्यता :- इकाई का स्थान 0 या सम संख्या है

Divisibility Rules (विभाज्यकता नियम)

Divisibility by 3 :- Sum of the digits is divisible by 3.

3 से विभाज्यता :- अंकों का योग 3 से विभाज्य है

Divisibility Rules (विभाज्यकता नियम)

Divisibility by 9 :- Sum of the digits is divisible by 9.

9 से विभाज्यता :- अंकों का योग 9 से विभाज्य है

Divisibility Rules (विभाज्यकता नियम)

Divisibility by 4 :- Last two digit of the number is 0 or both divisible by 4.

4 से विभाज्यता :- संख्या के अंतिम दो अंक 0 हैं या दोनों 4 से विभाज्य हैं।

Divisibility Rules (विभाज्यकता नियम)

Divisibility by 8 :- Last three digit of the number is 0 or divisible by 8.

4 से विभाज्यता :- संख्या का अंतिम तीन अंक 0 या 8 से विभाज्य है।

Divisibility Rules (विभाज्यकता नियम)

Divisibility by 11 :- Difference between the sum of the digit at even places and at odd places is zero or divisible by 11.

11 से विभाज्यता :- सम स्थानों और विषम स्थानों के अंकों के योग का अंतर शून्य होता है या 11 से विभाज्य होता है

If a number $5x423y$ is completely divisible by 88 then find the value of $5x - 8y$.

यदि एक संख्या $5x423y$, 88 से पूर्णतः विभाज्य है तो $5x - 8y$ का मान ज्ञात कीजिए।

$$40 - 16 \equiv \underline{\underline{24}}$$

$$\begin{array}{r} 5x423y \\ \hline 11 \times 8 \end{array}$$

$$\begin{array}{r} 5x423y \\ (4+9)-12 = 0 \\ n=8 \end{array}$$



1. 16

2. 24

3. 32

4. 40

Find the four digit largest number which when divided by 30, 18 and 20 leaves remainder 3 in each case.

चार अंकों की सबसे बड़ी संख्या ज्ञात कीजिए जिसे 30, 18 और 20 से विभाजित करने पर प्रत्येक स्थिति में 3 शेषफल बचता है।

$$\begin{array}{r} 9999 \\ - 99 \\ \hline 9900 \\ 18) 9999 \text{ (SS)} \\ \quad \quad \quad \overline{900} \\ \quad \quad \quad 99 \\ \quad \quad \quad - 90 \\ \quad \quad \quad \overline{90} \\ \quad \quad \quad - 90 \\ \quad \quad \quad \overline{0} \\ \quad \quad \quad \text{RE} \end{array}$$

$\text{LCM} = 30, 18, 20$

$\text{LCM} = 180$

Diagram illustrating the LCM calculation:

- Factors: 30, 18, 20
- Common factors: 2, 3
- Remaining factors: 15, 9, 10
- Further simplification: 5, 3
- Final simplified factors: 15, 10
- A blue circle contains the number 20, with arrows pointing from the 10 and 2 towards it.

9900

1. 9903

2. 9777

3. 9867

4. 9787

What is the sum of the digits of the smallest four digit number which is exactly divisible by 8, 10, 12, 18 and 24?

चार अंको की सबसे छोटी संख्या जो 8, 10, 12, 18 और 24 से पूर्णतः विभाजित है, के अंकों का योग क्या है?

$\text{LCM} = 360$

$\text{LCM} = 8, 10, 12, 18, 24$

2 | 8, 10, 12, 18, 24

2 | 4, 5, 6, 9, 12

2 | 2, 5, 3, 9, 6

3 | 1, 5, 3, 9, 3

3 | 1, 5, 3, 1

20:53

$$\angle m = 360^\circ$$

1. 8

2. 6

3. 9

4. 12

If $31x5$ is a multiple of 9, where x is a digit, then the value of x will be
यदि $31x5$, 9 का गुणज है, जहाँ x एक अंक है, तो x का मान होगा:

उत्तर स.

$$\frac{9+x}{9}$$



0, 9

1. 1

2. 3

3. 6

4. 9

NUMBER OF ZEROES

Number of Zeroes in an Expression

Zeroes are formed by a combination of 2×5 . Hence , the number of zeroes will depend on the number of pairs of 2's and 5's that can be formed

शून्य 2×5 के संयोजन से बनते हैं इसलिए, शून्य की संख्या 2 और 5 के जोड़े की संख्या पर निर्भर करेगी

How many zero will be there counting from the right side when we solve the following expression $24 \times 32 \times 17 \times 23 \times 475$

निम्नलिखित पद को हल करते समय दाईं ओर से कितने शून्य होंगे-

The image shows handwritten calculations for the expression $24 \times 32 \times 17 \times 23 \times 475$. At the top, the expression is written with circled factors: $24 \times 32 \times 17 \times 23 \times 475$. Below this, the factor 17 is crossed out. To the left, 24 is broken down into 16×3 , where 16 is further broken down into $2 \times 2 \times 2 \times 2$. The factor 32 is shown as 16×2 . The factor 475 is shown as 25×19 . To the right, the factor 17 is crossed out, and the factor 475 is crossed out. Below these, the factors 16×3 and 25×19 are grouped together with curly braces, and an equals sign is placed between them. A digital timer icon with the number "20" is positioned between the two groups. Handwritten numbers "20" and "2" are also present near the bottom.

1. 5
2. 3
3. 6
4. 4

How many zero will be there counting from the right side when we solve the following expression $25 \times 32 \times 625 \times 135$

निम्नलिखित पद को हल करते समय दार्द और से कितने शून्य होंगे-

$$25 \times 32 \times \underline{625} \times \underline{135}$$

$$\begin{aligned}25 &= 5 \times 5 \\32 &= 2 \times 2 \times 2 \times 2 \\625 &= 5 \times 5 \times 5 \times 5 \\135 &= 3 \times 3 \times 3 \times 5\end{aligned}$$



1. 5
2. 3
3. 6
4. 4

How many zero will be there counting from the right side when we solve the following expression $5 \times 10 \times 15 \times 20 \times \dots \times 50$

निम्नलिखित पद को हल करते समय दाईं ओर से कितने शून्य होंगे-

$$5 \times 10 \times 15 \times 20 \times \dots \times 50$$

$$\begin{aligned} 5 &= 5 \\ 10 &= 2 \times 5 \\ 15 &= 3 \times 5 \\ 20 &= 2 \times 2 \times 5 \\ 25 &= 5 \times 5 \\ 30 &= 2 \times 3 \times 5 \\ 35 &= 7 \times 5 \\ 40 &= 2 \times 2 \times 2 \times 5 \\ 45 &= 3 \times 3 \times 5 \\ 50 &= 5 \times 5 \times 2 \end{aligned}$$

$$5 \times 2 = 8 \text{ times}$$

1. 14
2. 8
3. 10
4. 12

SSC CGL 2011

Number of Zeroes of $n!$

$$\text{Number of zeroes} = \frac{n}{5} + \frac{n}{5^2} + \frac{n}{5^3} + \frac{n}{5^4} + \dots$$

$n \geq D$

$$n! = n(n-1)(n-2)(n-3) \dots 1$$
$$10! = 10 \times 9 \times 8 \times 7 \times 6 \dots \times 1$$
$$100! = \overbrace{100 \times 99 \times 98 \times \dots}^1$$

Always Numerator is greater than Denominator

Find the number of zeros at the end of 100 !

100 ! में शून्यों की संख्या ज्ञात कीजिये।

OR
Find the No of zeros at end of the Product $1 \times 2 \times 3 \times 4 \cdots \times 100 = ?$
100! or 100

$$\frac{n}{5} + \frac{n}{5^2} + \frac{n}{5^3} + \cdots - \boxed{H \geq D}$$

~~$\frac{100}{5} + \frac{100}{25} + \frac{100}{125}$~~
 $20 + 4 = 24$

1. 25
2. 24
3. 21
4. 22

Find the number of zeros at the end of 700 !

700 ! में शून्यों की संख्या ज्ञात कीजिये।

$$\frac{7}{5} + \frac{7}{5^2} + \frac{7}{5^3} + \frac{7}{5^4} + \dots$$

$$\cancel{\frac{700}{8}} + \frac{700}{25} + \frac{700}{125} + \frac{700}{625}$$

$$140 + 28 + 5 + 1 = 174$$



1. 168
2. 169
3. 173
4. 174

Find the number of zeros at the end of 1000 !

1000 ! में शून्यों की संख्या ज्ञात कीजिये।

$$\frac{1000}{5} + \frac{1000}{25} + \frac{1000}{125} + \frac{1000}{625}$$

200 + 40 + 8 + 1



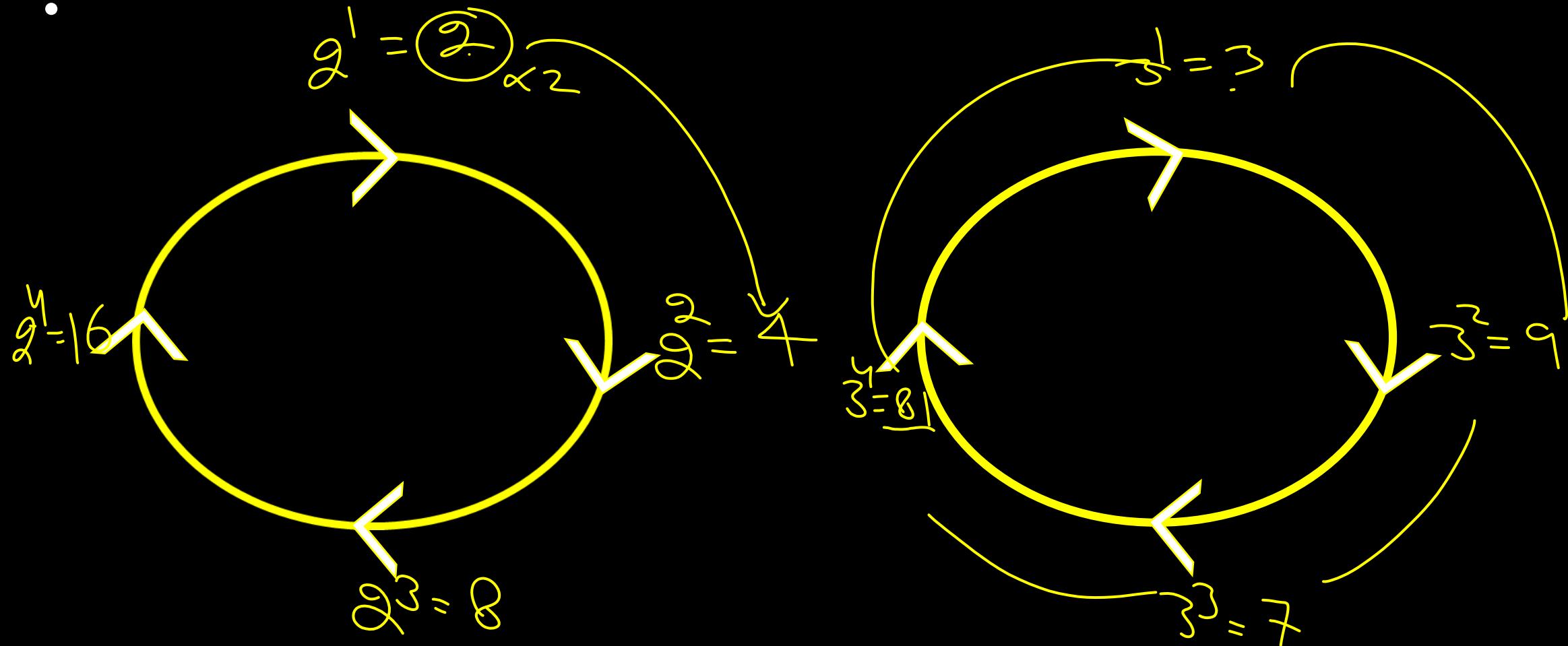
1. 249
2. 248
3. 240
4. 250

UNIT DIGIT

इकाई का स्थान

Cyclicity

:



UNIT DIGIT (इकाई का स्थान)

$$\begin{aligned}2^1 &= 2 \\2^2 &= 4 \\2^3 &= 8 \\2^4 &= 16 \\2^5 &= 32 \\2^6 &= 64 \\2^7 &= 128\end{aligned}$$

$$\begin{aligned}3^1 &= 3 \\3^2 &= 9 \\3^3 &= 27 \\3^4 &= 81 \\3^5 &= 243\end{aligned}$$

UNIT DIGIT (इकाई का स्थान)

The last digit (or unit digits) of 0 ,1,5 and 6 always the same irrespective of their powers raised on them .

0, 1, 5 और 6 के अंतिम अंक (या इकाई अंक) हमेशा समान होते हैं, भले ही उनकी शक्तियां उन पर हों।

$$(60)^{15} = \boxed{\text{Unit digit} = 0}$$

$$(121)^{61} = \boxed{\text{Unit digit} = 1}$$

$$(85)^{123} = \boxed{\text{Unit digit} = 5}$$

$$(76)^{49} = \boxed{\text{Unit digit} = 6}$$

What is the units digit of the number 3^{62} ?

इकाई का स्थान ज्ञात कीजिये 3⁶²

$$\frac{3^6}{3^4} = 3^2 = \textcircled{a}$$

1. 9

2. 1

3. 7

4. 3

What is the units digit of the number 578^{345} ?

इकाई का स्थान ज्ञात कीजिये 578^{345}

$$8^{\frac{45}{4}} = 8^1$$



1. 2

2. 8

3. 6

4. 4

What is the units digit of the number 348^{88} ?

इकाई का स्थान ज्ञात कीजिये 348^{88}

$$348 \xrightarrow{88} 8^{\frac{88}{4}} \rightarrow 8^4$$


$$8 \times 8 \times 8 \times 8$$
$$= 64 \times 64$$
$$= 4096$$

1. 6
2. 2
3. 4
4. 8

What is the units digit of the number $3^6 \times 4^7 \times 6^3 \times 7^4 \times 8^2 \times 9^5$?

इकाई का स्थान ज्ञात कीजिये $3^6 \times 4^7 \times 6^3 \times 7^4 \times 8^2 \times 9^5$

H.W



1. 9
2. 4
3. 8
4. 6

What is the units digit of the number $(2137)^{754}$?

इकाई का स्थान ज्ञात कीजिये $(2137)^{754}$

$$(2137) \xrightarrow{7^{54}} 7^{\frac{54}{4}} = 7^2 - 49$$



- 1. 9
- 2. 1
- 3. 7
- 4. 3

HW....What is the units digit of the number $584 \times 328 \times 547 \times 613$?

इकाई का स्थान ज्ञात कीजिये $584 \times 328 \times 547 \times 613$



1. 9
2. 1
3. 2
4. 3

