

NUMBER SYSTEM

(Divisibility Rule)

NO. OF QUESTIONS	MAXIMUM DAYS	CLASS DURATION
10 Questions	1 DAY	2 HOURS

$$\textcircled{\#} \quad 2/4/8/16$$

$$\textcircled{\#} \quad 3/9/6$$

CLASS EXERCISE

Question : $12345679 \times 72 = ?$

I) 88888888

iv) 898989898

II) 999999998

III) 888888888

40

9

3/9

8x9

CLASS EXERCISE

Question : the least no of 5 digits which is divisible by 123 ?

~~I) 10037~~

II) 10086

~~III) 10081~~

~~iv) 10063~~

(Cgl 2018)

3

CLASS EXERCISE

Question : How many nos are between 100 and 600 which are divisible by both 4 and 6 ?

i) 40

ii) 41

iii) 42

iv) 43

(SSC CGL 2018 ,2019)

$$\text{Lcm}(4, 6) \\ \downarrow \\ 12$$

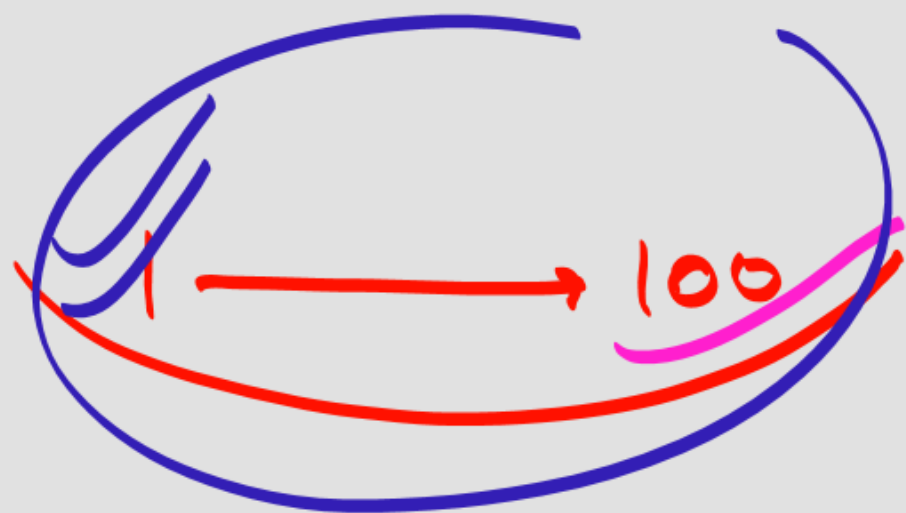
$$n(12) = \frac{12}{12} \\ \textcircled{8}$$

$$100 \text{ — } 600$$

$$101 \text{ — } 599$$

$$n(12) = \frac{599}{12} \\ \underline{\underline{49}}$$

$$m = 49 - 8 \\ \textcircled{41}$$



$$n(2) = \frac{100}{2} = 50 \checkmark$$

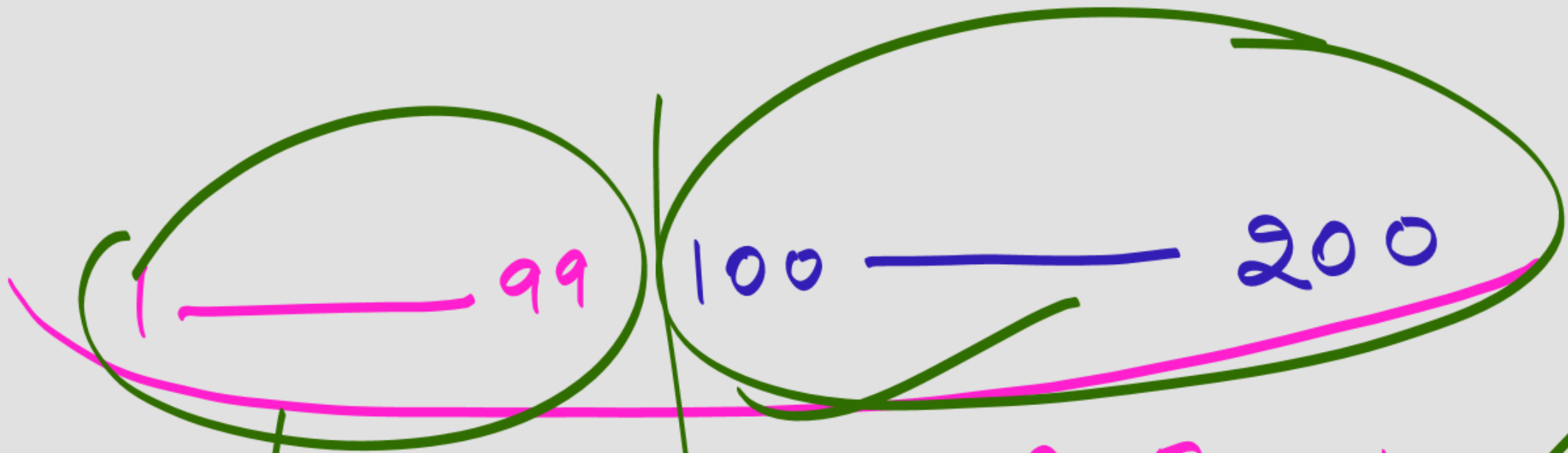
$$n(3) = \frac{100}{3} = 33 \checkmark$$

$$n(7) = \frac{100}{7} = 14 \checkmark$$

$$1 \text{ --- } 500$$

$$n(5) = \frac{500}{5} = 100 \checkmark$$

$$n(7) = \frac{500}{7} = 71 \checkmark$$



$$n(s) = \frac{99}{5}$$

$$= 19$$

$$n(s) = \frac{200}{5} = 40$$

$$\text{Ans} = 40 - 19 = 21$$

$$1 \text{ --- } \textcircled{6} \text{ --- } 200$$

① divisible by 2 or 3.

② divisible by 2 and 3.
 $\text{Lcm}(2,3)$

$$n(6) = \frac{200}{6} = \textcircled{33}$$

Ans

$$\begin{aligned} n(2) &= \frac{200}{2} = 100 \\ n(3) &= \frac{200}{3} = 66 \\ n(6) &= \frac{200}{6} = 33 \end{aligned}$$

$$\begin{array}{r} 100 \\ + 66 \\ - 33 \\ \hline 133 \end{array}$$

$\text{Lcm of } (2,3)$

DIVISIBILITY RULES

Divisible by 5

Divisible by 25

Divisible by 11

5 | 10 | 25 | 60

⑤:- if unit digit \rightarrow "5/0"

Example:- 120, 245, 34825

⑩:- if unit digit - "0"

Ex:- 100, 2080


25 :- of last 2 digit " 25 | 50 | 75 | 00 "

Ex 250, 875225, 8775
2800

Imp
11 :-

284394
-6 1 5
Sum = 0

④

8	4	9	3	2	4	1	9
<hr/>							
							
4	6	-2	-8				
<hr/>							

Sum = 0

0 || || | 22

⊕

3 4 3 2 5 7 2
↓ ↗ ↖ ↗ ↖ ↗
-1 1 -2 2

Sum = 0

CLASS EXERCISE

Question : Fill the largest digit that will make 236953_876 divisible by 11 ?

$$\begin{array}{ccccccc} 2 & 3 & 6 & 9 & 5 & 3 & _ & 8 & 7 & 6 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ - & + & - & + & - & + & - & + & - & + \end{array}$$

Handwritten calculation showing the alternating sum of digits: $2 - 3 + 6 - 9 + 5 - 3 + x - 8$. The result is $x - 8$, which is circled in blue.

i) 7

ii) 9

iii) 7

iv) 3

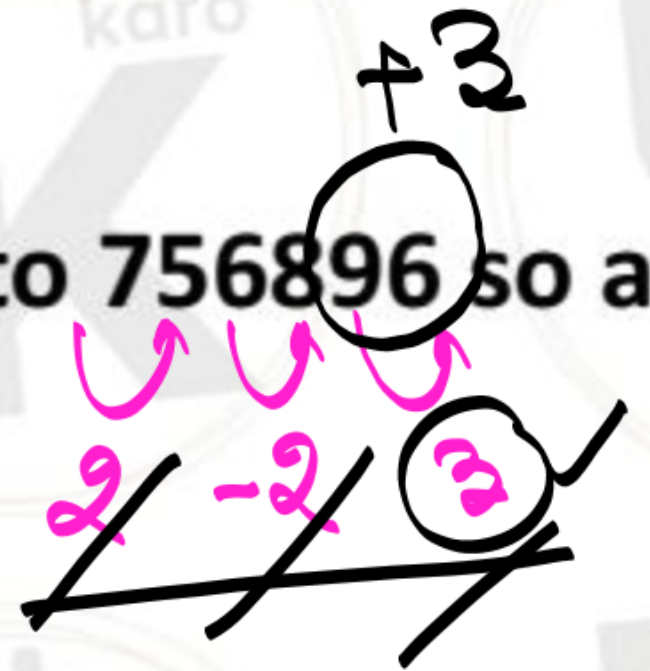
$$\text{Sum} = x - 9$$

(SSC CGL 2018 ,2019)

$$x = 9$$

CLASS EXERCISE

Question : Smallest number that must be added to 756896 so as to obtain the resulted number divisible by 11 ?



i) 5

ii) 3

iii) 1

iv) 2

Sum =

(SSC CGL 2016 , 2018 Mains)

CLASS EXERCISE

Question : Both the end digit of a 99 digit number N are 2 . If N is divisible by 11 then all the middle digits are ?

i) 4

ii) 3

iii) 1

iv) 2

odd

(SSC CGL Mains 2017)

$N = \textcircled{2} - - - - - \textcircled{-2}$

$$x = a + b \\ 2 + 2$$

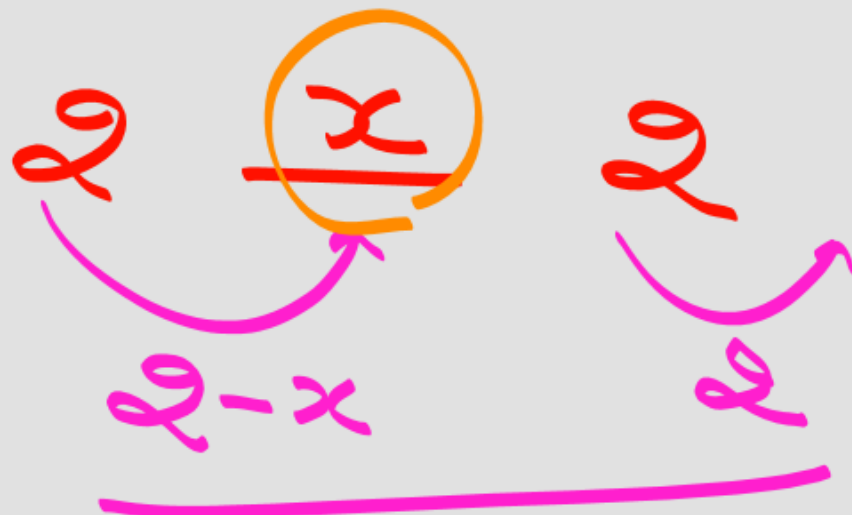
$$x = 4$$

$N = a \dots b$

if no 0-digit = odd

$$x = a + b$$

#



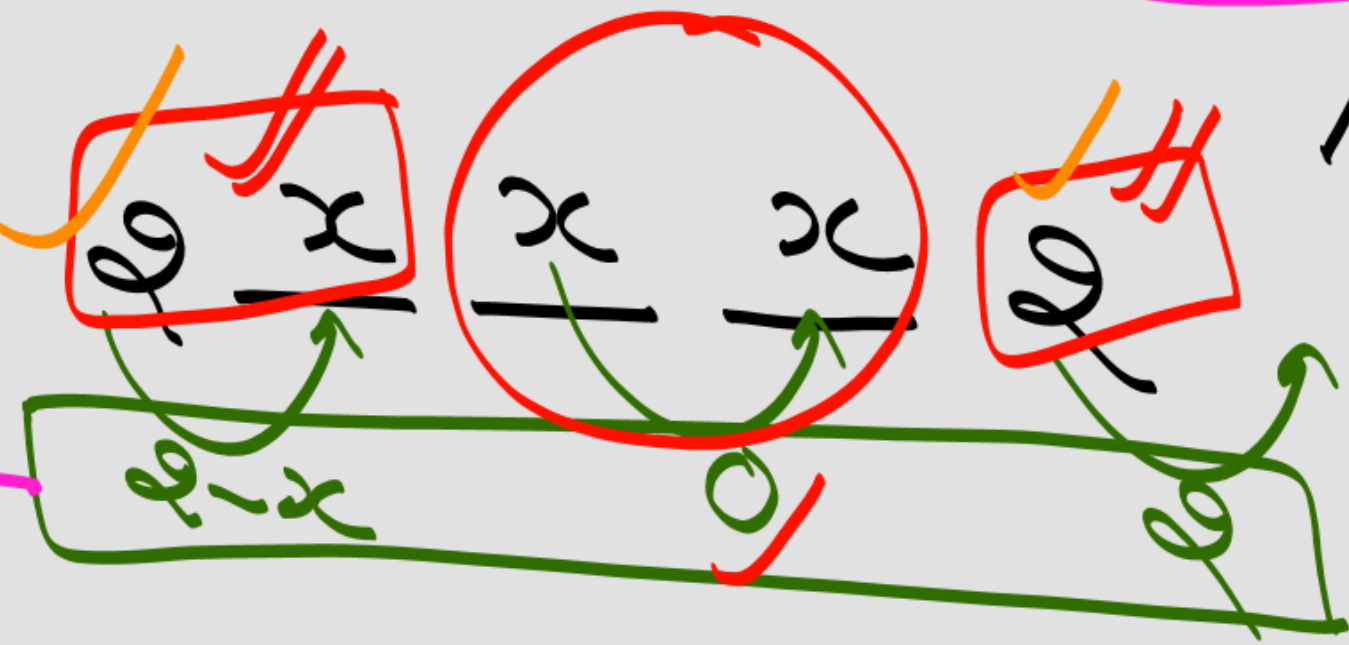
$$\text{sum} = 4 - x$$

$$x = 4$$

$$x = 4$$

#

$$\text{sum} = 4 - x$$



for Even no. of digit

(11)

$a \underline{x} \underline{x} a$ #

always divisible
for any value of x .

$2 \underline{x} \underline{x} 2$
 $2-x$ $x-2$

Sum = 0

$x = \text{Any digit}$

$a \underline{x} \underline{x} b$ #

Never
divisible
(11)

$2 \underline{x} \underline{x} 2$
 $2-x$ $x-2$

Sum = -1

Never
divisible by
(11)

i) 7

iii) 3

iv) 1

(SSC CGL 2018, 2019)

2 4 m 3 7 6 5 n 4

2 4 m 3 7 6 5 n 4

2 2 | 1 1 | 0

5 + m - n

0 4
2 4
4 4
6 4
8 4

n

6

8

0

20

4

6

8

-

20



Thank you