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CAT QUESTIONS

	To which akanathing and it is
	To reach ekapathshaala a student has to take 100 steps. He can take of steps of 3 or 5 only. How many different steps of 5 can he take, if he must take at least one step of each type?
	sieps. The time whe of steps of 3 or 5 only. How many
	aireland siers of 5 can he take, if he must take at
	last one step of each type?
	$3x + 5y = 100$ $x = 1, 2, 3, y, \dots$
	* 001-12-152
	No. of Steps can't be in points
	N=1 N=3
	3(1)+5y=100 $3(2)+5y=100$ $3(3)+5y=100$
	3 1 3 1 2 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1
	5y = 97 $5y = 91$ $5y = 91$
	5y = 97 $5y = 94$ $5y = 91$ $y = 18.8$ $y = 18.2$
	n=5 - n) 11 n=6 1 - n=7
L.	3(5)+ 5y=100 3(7)+5y=100
	15 + 5y = 100 $18 + 5y = 100$ $21 + 5y = 100$
	5y = 85 5y = 79
	y = 17 $y = 16.4$ $y = 15.8$
	Daniel Da
	η=10 η=15 η=20
,	
	3(10) + 5y = 100 $3(15) + 5y = 100$
	5y= 70 5y= 55w 100 5y= 40
	4=14 4=11-0x 21/4=8
	J
-	

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,	and the second s	N = 30
231 37	3(25)+ 54=100	30) +5y=100 M
Minu		0+54=11001
Like It		254=1018 Anos Ne
	y=5 my shae	by and my tand
	N= 35	001 : 12 em 1
	3(35) +5y=100	
	105+54=100	
_	54= 100-105	
C.	y = -5 = -1	7
001119		00 -10 -(1)
no - 43	: We will take multiple	es of 5.
	ାର ମୁଖି	
X.81 - 17	X=5, y=17	N PI - L
	91=10 y= 14	[A 2- A- 1/ 1-1
5-21 -5-4-	7 N=15, Y=11	[we can't take y] as negative: 6]
101-11	$\gamma = 20$, $\gamma = 8$	L. as negative: 6 J
P 10	2 25 y=5	
C . I .	y=30, $y=3$.	
	: Total 6 val	1401
0	TOCK O VIA	LM ES
cert 2:	PQR X QS = PQRS	end a serie
-01 - U -	PQR = 3 digit no.	
pri an	QS= 2 digit no.	
3 211	Pars= 4 digit no.	
¥	J	L
	find D.	
	- ye	

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Ц.	Find the power of 2 in 100! Find the power of 3 in 100! Find the power of 6 in 100! Find the power of 10 in 100! $2:-100 = 50 = 25 = 12 = 6 = 3 = 1$ $2 = 2 = 27$
	3:- 100 = 33 = 11 = 3 = 1 .01 21 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	6: $\frac{100}{3} = \frac{33}{3} = \frac{11}{3} = \frac{3}{3} = 1$ [(2 x 3) will take higher higher higher higher higher higher higher higher higher high
	10:- $100 = 20 = 4 = 1$ [(2x5) take highest] = 5^{24}
5.	What is the greatest power of 7 that will divide 100! completly? 100 = 14 = 2 7 7
	716
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1.	1671 = 5°	xy. What	is the	greatest	value	01	P(given y	is
0	not a m	ultiple of 5)	?1	10 1 10	1800		CJ	

$$\frac{167}{5} = \frac{33}{5} = \frac{6}{5} = 1$$

$$= 5^{40}$$

7. Find the smallest no. that should 1981 so that it becomes odd number.

$$\frac{198 = 99 = 49 = 34 = 12 = 6 = 3 = 1}{2 \times 2 \times 2 \times 2 \times 2}
 \frac{3}{2}$$

$$\frac{194}{2}$$

$$\frac{198}{2}$$

8. When 2 numbers are divided by a divisor, 19\$32 are obtained as remainders. When the sum of these 2 no's is divided by the same divisor, the remainder is 8. find divisor.

* Property:- Whatever can be done with a no. can be done some with the rumainder.

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	_
19 32 remainders 19+32 = 51 (but remainder is 8) 43 cut Kar diya	
43 cut Kar diya	
:. Divisor = 43	_
9. The remainder when 28491 is divided by 7 is	
(ii) 1 (iv) 5 . yodinus tho	
* Remainder Cycle:	
1. 2 ⁸⁴⁴¹	
$\frac{7}{2} = 2$	
$\frac{\lambda = \lambda}{7}$	
LOW SE 40 # 40 sivil a pel libisteps = 3 wedman & mital.	8
estate as parties and more power of the summer of the discrete of the summer of the	
distance by the same divisor, the remainded is 7	
3 8491 283	
011	
24	
9 :- Ans - 2	
9 11165-2	
1 Ans:- (i) 2	
Remainder = 1	
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1986		TREE . P TREE
2. 41986		91
9		
4 = 4	No. 1 Cho	2
9	No. of Ste	08=3
16 = 7	power -	- Step
9	0 1001 000	
28 = 1	3 19 86 662	o rs
9	18	<u> </u>
	18	
	18	3 . 27
	6	
	6	31 - 1
	81 -292+90	17.)
	a to a compa	
R	emainder= 0	:. Ans=1
	11 1201 91	
7 71986	RI	r j
3. 1	81	3 = 3
7 = 7	\$1	
$\frac{1-1}{9}$	Steps=3	B el air
49 = 4	steps=3	÷ sten
9 7	· subciocas A	d1 : 19 :
24		62
28 =1	S : 1.11 : 18	C : 31
	18	D.
	18	11 - 126 p.
	6	Pi
	6	
		Va I
0.	6	:. Ans=1
<u>gem au</u>	index = 0	

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970	
	42 Fig. 1
[CAT] 4. 31987	D
19	
3 = 3	12 = 127/1
19	19
9 = 9	36 = 17
19	
97 = 8 19	<u>51</u> = 13
<u> 24 = 5</u>	<u>39 = 1</u> 19
15 = 15	o)
19 - 19	9 teps= 18
45 = 7	9teps=18 power: Step
<u>45</u> = 7	o vikahanah
21 = 2	18 1987 11
19	18 3801
6 = 6	18
19	18
18 = 18	· sig Ja
19 975	- Jeylan 1 : 2 1 - 1
54 = 16 19	Remainder = 7
6	100 1100 Day 0
48 = 10 19	:. Ans:- 2
30 = 11	
19	
33 = 14	
19	
42 = 4	
19	
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		, , , , , , , , , , , , , , , , , , ,
5.	5	7
	3 = 3 S	teps=4 ower ÷ Steps
	<u>5</u>	ower ÷ Steps
	9 = 4	Ans:-1.
	12 = 2	and A in the second sec
	6 = 1	
	5 187654 X 187653 X	X4x3x2×1.
*	Fermat Rule:-	- 4 6 8 to
	aeven = 1	7. 29
	a+1	= a even
	aodd = a	a+1
	a+1	1001
	(a+1) any = 1	8. 45 ⁶
	<u>a</u>	3
6.	496067	$= a^{odd} = a$
	6	a+1
	4 = 4 As remainder	
	4 = 4 As remainder 6 is repeating.	= 2
	16 = 4 6	
	6 : Ans=4	
(M) (TO CONTRACT	., [110]	Scanned with CamScanner

$\frac{3^{6}}{2}$ $\frac{3}{(\alpha+1)}$ $\frac{3}{(\alpha+1)}$	3 2 3
2 cony	
2 cony	5 : 3
2 cony	<u> </u>
2 cony	8 = 8
1 any	8 7 C
(0+1)	_
· · · · · · · · · · · · · · · · · · ·	2
a grand of the state of the sta	P = 181
4 (
	3 - 3'
4. L.	
operty:	1 - 2
n . n	· 7
$\frac{1-y^{1}+x-y}{y}$, $\frac{1-y^{2}}{y}$	Y 182 191
2 12 - 1 N -11) (N +11)	
	A 2 1
2 4	
P C . T	184.
1-11n - x-v n-ndd	£ 1
J. 10 7 , 11 2 0001	
$y^{3} - y^{3} - (x - y) (x^{2} + y^{2} + xy)$	W.C.
$3^{3} - 1^{3} = 27 - 1 = 26 \rightarrow 2$	
1001	
$+ v^{n} = v + v$ $m = pdd$	* * *
1) = 1, 000	
$x^3 + y^3 = (x+y) / x^2 + yy + y^2$	<u> </u>
$3^{3} + 1^{3} = 27 + 1 = 28$	1484PM 3
J T - A 171 - A0	A
	and the second
V V	
	14
	$x^{2}-y^{2} = (x-y)(x+y)$ $y^{2}-x^{2} = (y-x)(y+x)$ $x^{3}-y^{3} = (x-y)(x^{2}+y^{2}+xy)$ $x^{3}-y^{3} = (x-y)(x^{2}+y^{2}+xy)$ $x^{3}-y^{3} = x^{3}-1 = $

	\$100 E	DATE
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	$63^{27} - 31^{27}$	
10.	32	11. $63^{27} + 31^{27}$
	The Original	94
	$x^n - y^n = odd$	xn + yn n- nodd
	(x-y) Whimoning i	, 11= Octo
	32	94
	Remainder = 0	Remainder-0
8 00	always to approach with boil . P+	Al - NA har
١٦.	6324 - 3124	13. 63 ²⁴ -31 ²⁴
	32	94
	63-31,63+31	63-31, 63+31
	32, 94 SUN -UKA+	32,94
	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	U - 2 - 1
	Remainder = O youx - xxx	- Remainder = 0
14.	Find remainder:	1000
14.		15: 4 (3) - 12 14 15
14.		5 ¹²
14.	7 ¹¹ ¹²	15: + (3) 14 15 5 12 14 15
14.	11121314	
14.	711121314	1 6 6
14.	711121314	1 6 6
14.	7 ¹¹ 121314 6 Ans:-1.	1 6 6
14.	7 ¹¹ 121314 6 Ans:-1.	1 6 6
14.	7 ¹¹ ¹² 1314 7 6 Ans:-1.	1 6 6
	7 ¹¹ 121314 6 Ans:-1.	Ans:-J.
	7 ¹¹ ¹² 1314 7 6 Ans:-1.	1 6 6
	7 ¹¹ ¹² ¹³ ¹⁴ 6 Ans:-1. 5 ¹³ 6	Ans:-J.
	7 ¹¹ ¹² 13 ¹⁴ 6 Ans:-1. 5 ²¹ 5	Ans:-J.
	7 ¹¹ ¹² ¹³ ¹⁴ 6 Ans:-1. 5 ¹³ 6	Ans:-J.
	7 ¹¹ ¹² ¹³ ¹⁴ 6 Ans:-1. 5 ¹³ 6	Ans:-J.