Number System

Types of numbers

Real

Real

Rational (Non-Terminating 4 repeating) for

Irrational (Non Terminating & non repeating)

(J, J2, J3)

Co-Prime numbers - Set of two numbers having HCF=1 Ex- (2,3), (5,7), etc.

Perfect number - \mathcal{E}_{\times} . 6=1,2,3,6Adding factor Sum = 1+2+3=6

Ex-21.25

Sel 2125-212

90

1

300

4x - 1.2555... = 1.25 = 125 - 12 = 113

 $1.256 = 1256 - 12 = \frac{1244622}{990} = \frac{622}{990}$

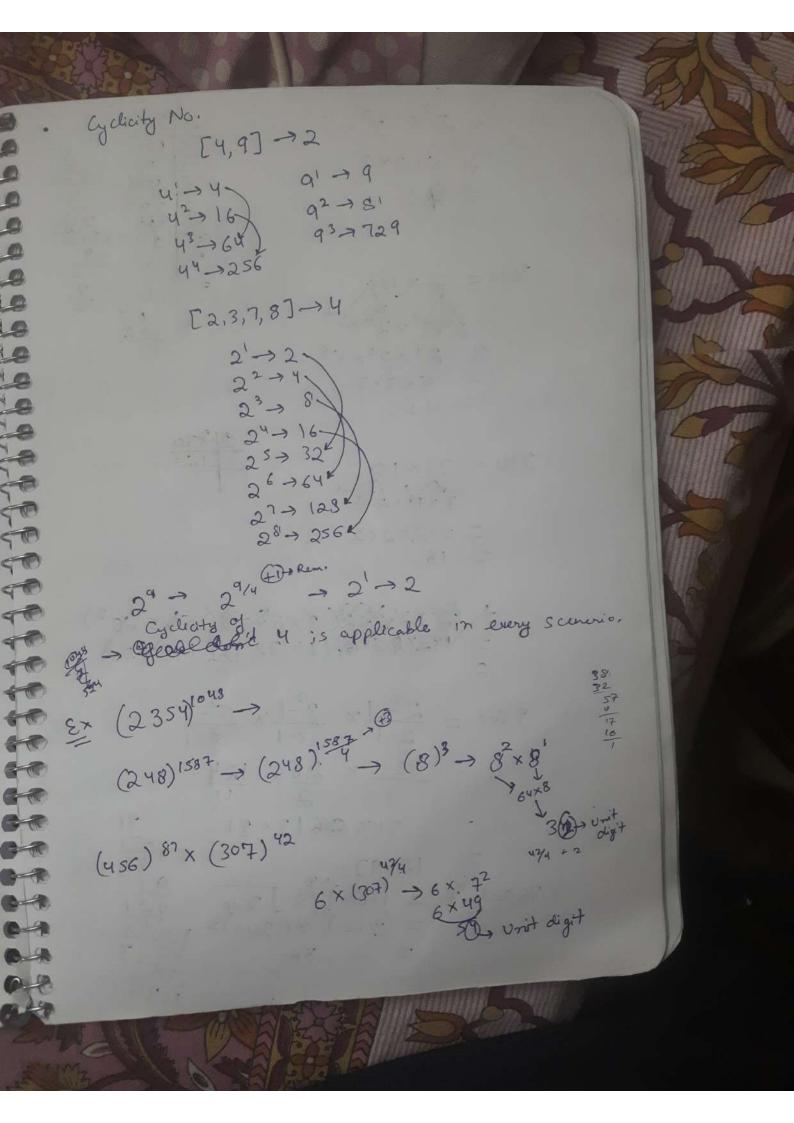
1.256256...=1.256 = 1256-1 = 1255

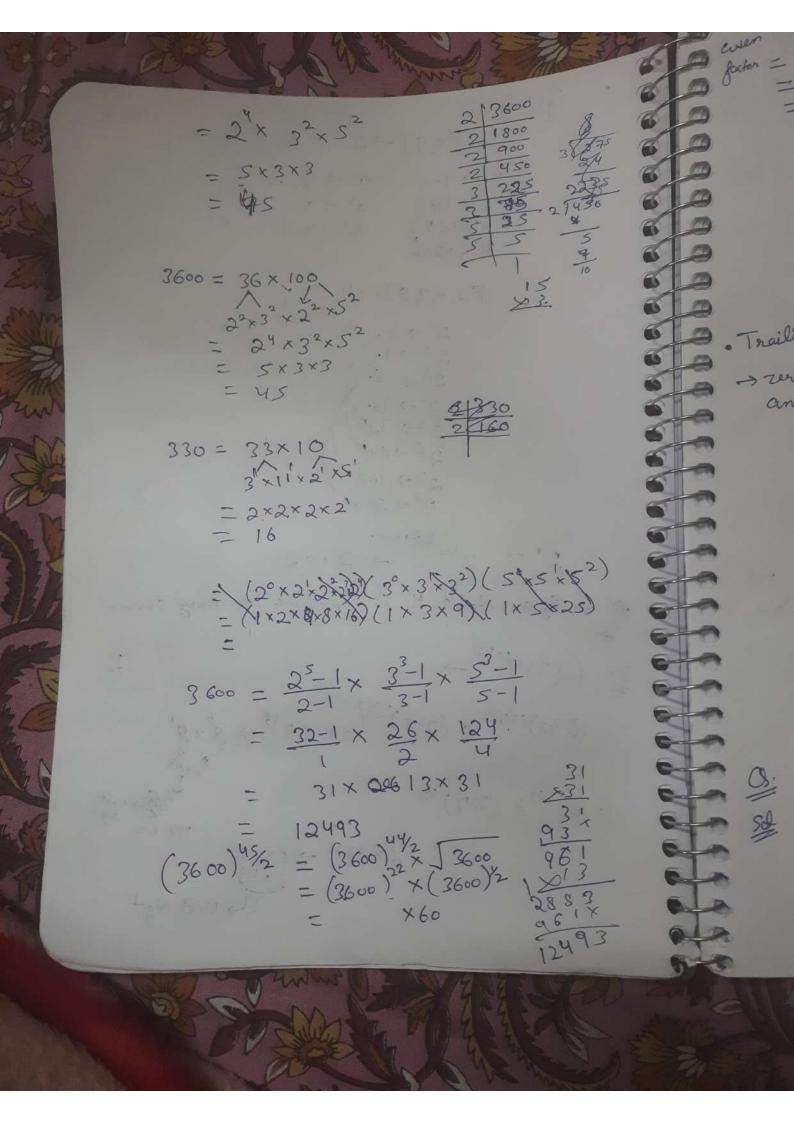
0.2333... = 0.23 = 0.003 = 23-2 = 2+7 = 1 90 = 20 = 30

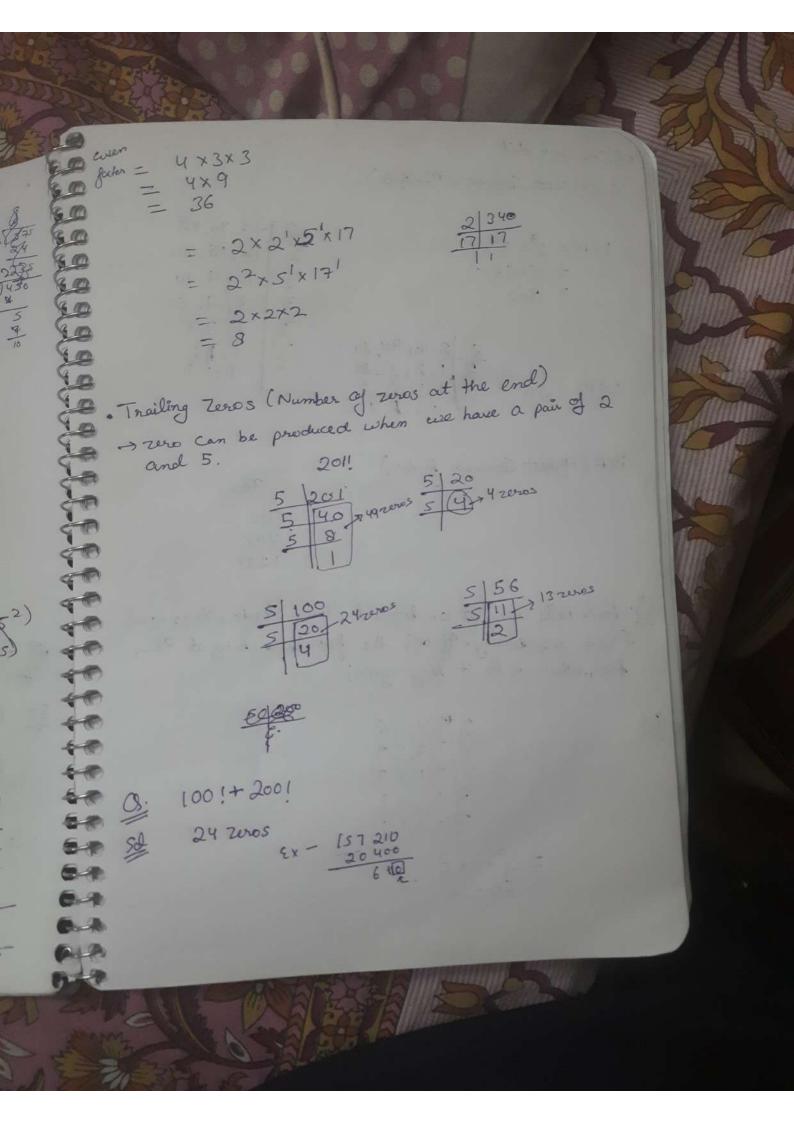
Divisibility rule 11 -> (Sun - Sum posi) -> It should be 0 or 10593 9-9=0 88 - 11×8 12-4×3 -> Remainder theorem Dividend = Divisor × Quotient) + remainder Stremainder Divisor Divisor - 6) 25 -> dividend (5x x x)+3x = 25 x 5 + 3 x 5 125+15 · Remainder of -2×10 = 20 = 9 123×120

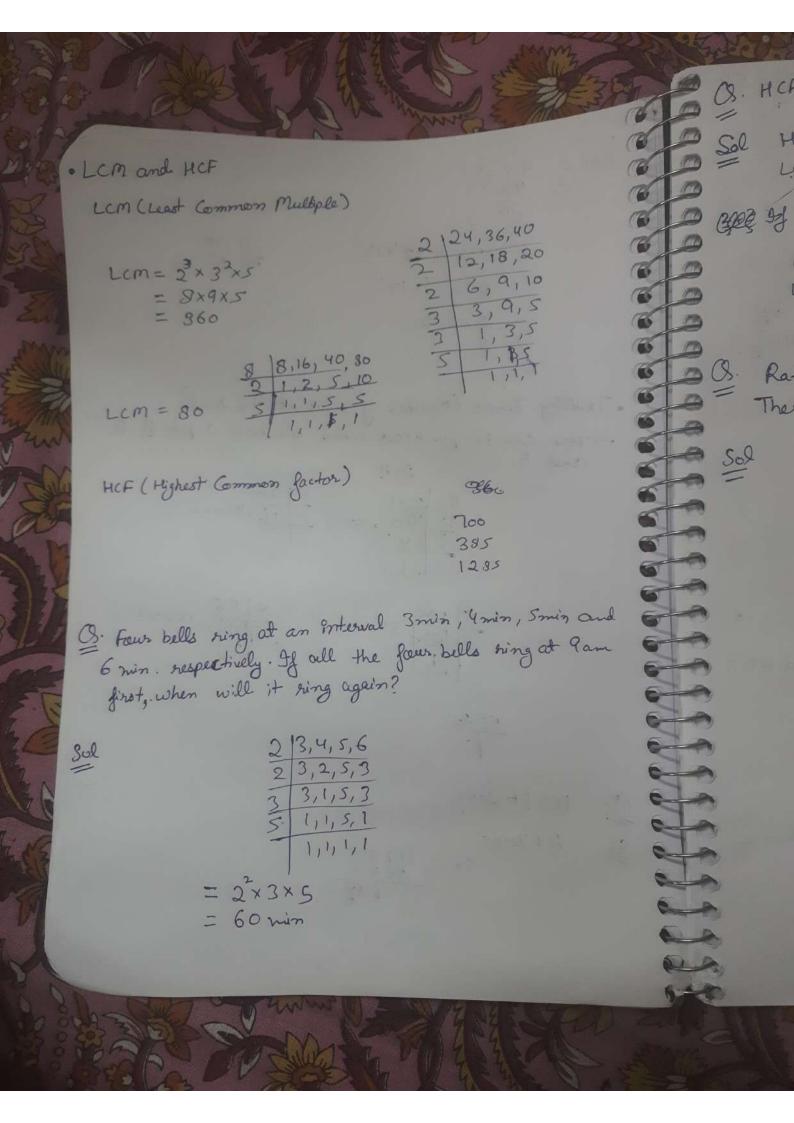
Os what is the remainder when 37 is divided by 8? · Negative Reminder 121 $123 \times 120 = -2 = 11 - 2 = 9$ Factors - The values that divides the no. Completely i) N = 2ª × 3b × 7ª = (a+1)(b+1)(d+1) { No-of Factors 300 = 22 x 3 x 52 = (2+1) (\$+1) (2+1) = 3 x 2x3 odd No. of Jactors = (b+1) (d+1) Even No. of Jactors = (64) a (6+1) (d+1) iv) Sum of all the factors = 300= (2°+ 2'+22) (3°+3') (5°+ 5'+52) risor for the = (1+2+4)(1+3)(1+5+28) $a^{\alpha} + a^{1} + a^{2} + \dots + a^{n} = a^{n+1} = \left(2^{n+1}\right)$ V) Product of the factors = (N) Factor/2 (300) 18/2 = (300)9 · Perfect Square. (2;2,24) (3,3,3,36) (5,5°) N= 25 x36 x 53 3×4×2=24 Perfect Cube- (2°, 23) (3°, 33, 36) (5°, 53)

Note- $3 \in 3 \times 2^2 = 9$ $(36)^{9/2} = (36)^{8/2} \times \sqrt{36}$ Multiples -30 = 2'x3'x5 $\frac{9}{9} \frac{(17)^{20}}{9} = \frac{(8)^{20}}{9} = \frac{(-1)^{20}}{9} = 1$ 44×43×46×47=-1×-2×1×2 $\frac{2^{30}}{7} = \frac{(2^3)^{10}}{7} = \frac{8^{10}}{7} = 1$ Unit digits - Right most digit of a no. is called Unit digit. 1 Simple Product type 2 Power Type Ex - 278 * 623 29 s unit digit (127)23 -> (127)23/4 -> (37) Remember 73 -> 343

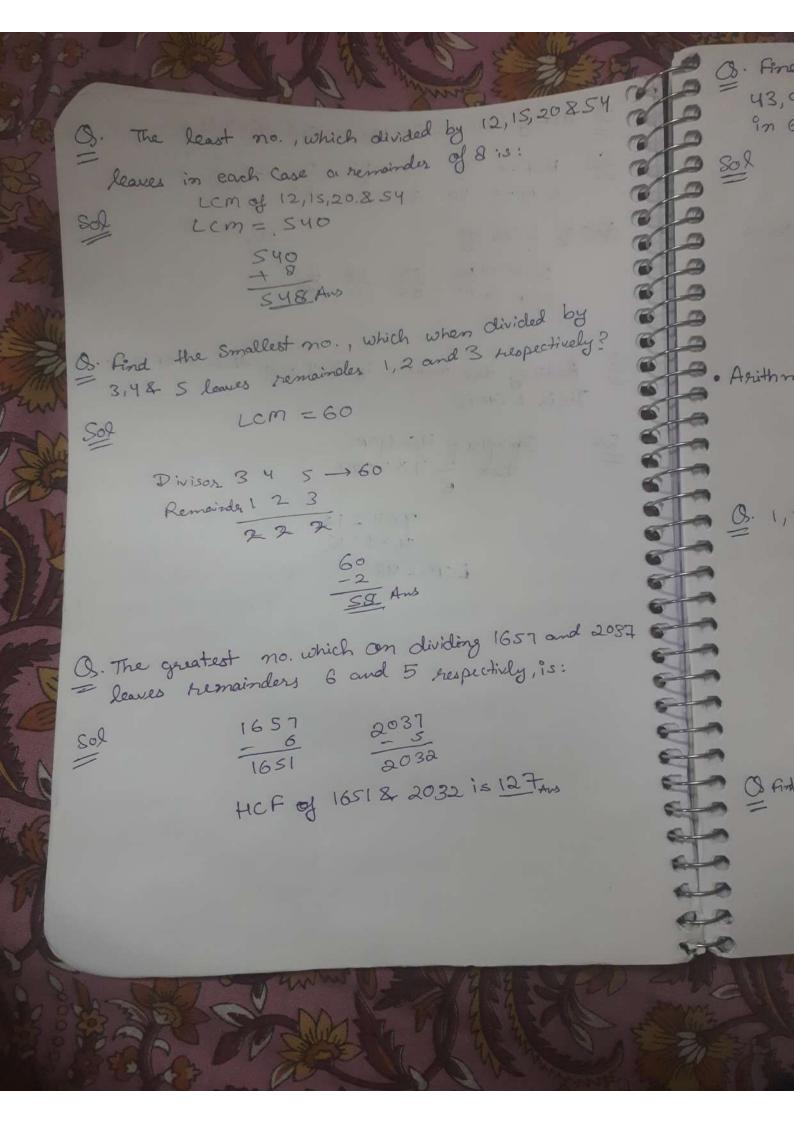


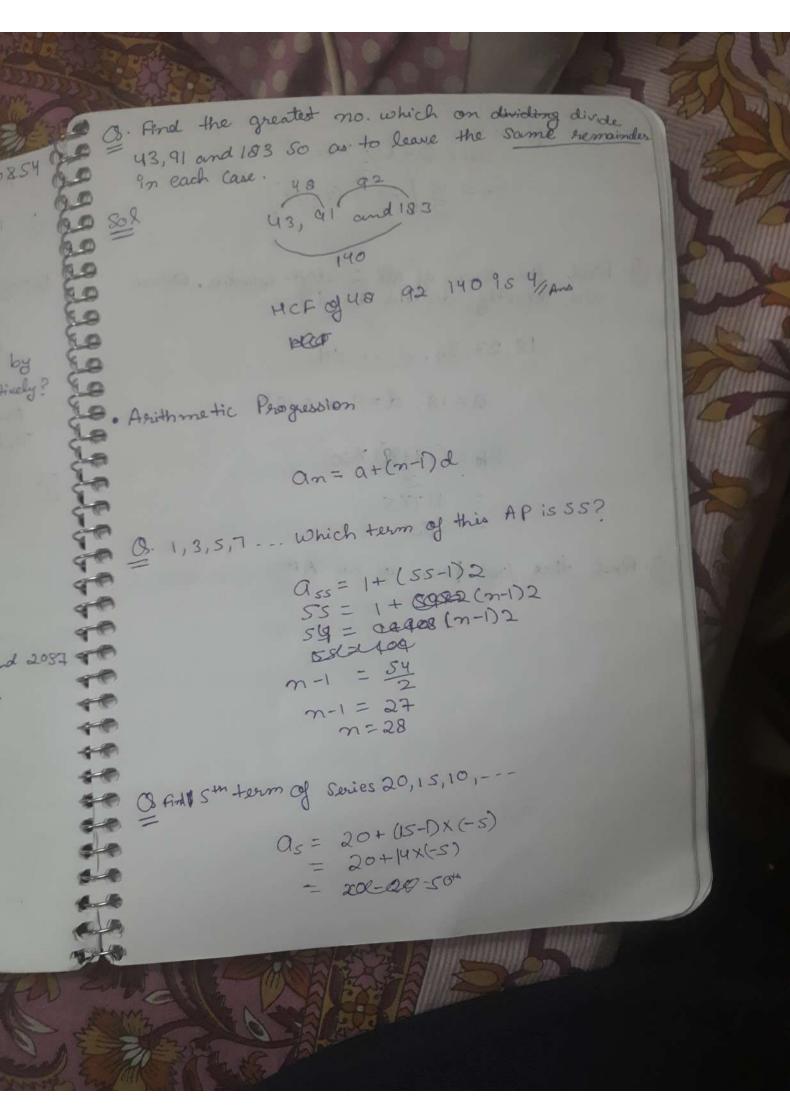






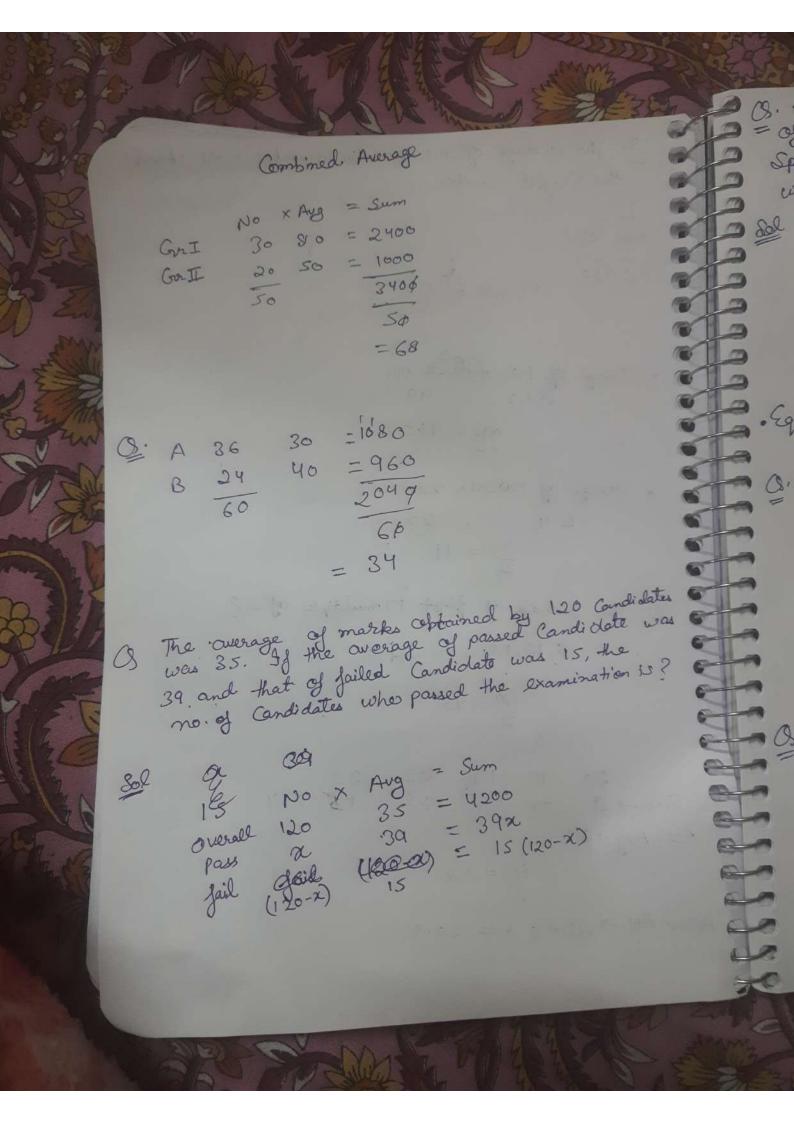
OS. HCF of 9/10,12/25,18/35 and 21/40:52 Sol $HCF o <math>\frac{4}{10}$ $\frac{12}{25}$ $\frac{18}{35}$ $\frac{21}{40}$ $= \frac{3}{1400}$ --21/40? BOR ST LCM of -LCM - 4 12 18 21 = Ratio of two numbers is 3:4 and their H.CF is 4. Their L. C. Mis 3×4=12 4 x4 = 16. LCM= 48 90 4 4 20 2 0





h-C	VALUE OF THE PROPERTY OF THE P	2000	
	TO THE STATE OF TH	13	S. The
	· Average	13	1.) 22
	Averages = Sum of Observation No. of Observation	13	ر النف) ع من) ع من) ع
5		12	
THE PARTY OF THE P	80H00_180 = 90	E	. Ouser
E AN	Q. 75 80 85 90 95 100 (Medal term)	1	
V ZW	$S_2 = 2.5$ 85 + 2.5.= 87.5		, Owe
The state of the s	90-2.5=87.5 Formulae	E	
3V	Townsen of the second	E	0 -
3	nature		OF THE
A STATE OF THE PARTY OF THE PAR	First n m2 odd no. (n+1)	#	
(4)	First n even no. $(n+1)(2n+1)$	6	
12/2	no.	O T	Sum
17.00	Consecutive no. n (histrem) La 2	4	Ass.
	Or Numbers in A.P	0	Actual
			2
38	NAME OF THE PARTY		

Of. The overege of 5 consecutive number is 21. Find the largest number 1.) 22 with 23 19 20 (1) 22 23 ١١١١) 24 iv) 25 · Overge of 100 maturel no. 9 = 49.5 . Owerge of 100 even no. $\frac{22}{2} = 11$ The overage of first 17 multiples of 5? 5,10,15,----85 90 = 45 20 19 Sum-> 0 4 = 0.8 Ass. Aug > 20 Actual Aug. -> 20+0.8 = 20.8



9. A man goes from home to his office at speed = of 40km/h and return from office to home at a Speed of 60 km/h. And the Coverage Speed during whole journey. 2000 2 × 2400 2×40×60 = 40+60 M C = 48 (A D · Equal Distribution of Data Q. If the aug. weight of 10 students in a class is 30kg, when weight of teacher is also included new Overage becomes 33. Find weight of teacher. No x Aug = Sum indidates To te was on 12? The ong weight of a class of 24 students is 30kg when weight of the Heacher is also included the overage weight is increases by 1 kg. what is the weight of teacher in kg Aug Sum 31 775

(3) What is the remainder when
$$2^{x}7$$
 is divided by

 82

$$82$$

$$82$$

$$83 = (3^{2})^{2} \times 3^{1} = 9^{3} \times 3$$

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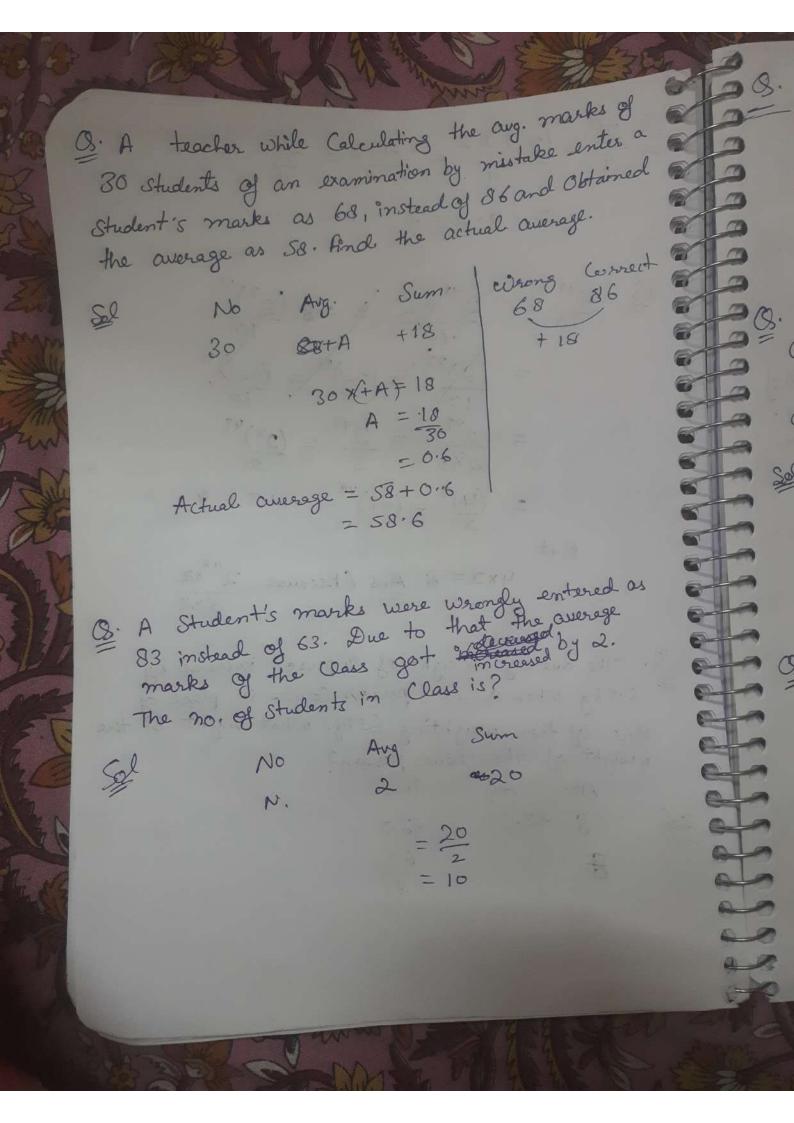
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 $\frac{2^{99}}{8\times5} = \frac{2^{98}}{5} = (2^2)^{49}$ $= \frac{(4)^{19}}{5} = (-1)^{49} = -1 + 5 = 4$ But 4x2 = 8 Ams (Because 2°xx) S. The average weight of 8 person increase by 2.5 kg when a new person comes in place of One of them weighting 65 kg. what might be the weight of the new person? No. Aug Sum 8 +2.5 +20 8



Ayg No. Ang 12 60 60 urrect 3. The average of a family is 24 yrs which is Consisting of Smembers, out of which the youngest being 6 yrs old. What would be the oug. age of family just before his birth? No. Aug Sum 120 24 e as Os. The average age of 10 members in a Committee is increased by 3 yrs when two men whose age are 25 yrs and 35 yrs are replaced by two new men. Find the average a two new men. +3 10

Os. If the average weight of 10 students in a class is 30 kg, when weight of teacher is also included new awage becomes 33. Find weight of teacher.

9.0

9.13

0.10

9.0

S.A

9-0

8-2

9-9

0.0

0-3

0-4

er a

0

0

-

2

NO	Aug	Sum
10	36	300
11	33	363
0-13		-63kg

Of The aug. marks of some students is 40 and 10 of them get 60 marks instead of 90 marks by motake.

After Correction, the new average becomes 50. And no.

of students.

Sol

No Aug Sum

40
$$\chi$$

10 χ

50 χ

50 χ

10 χ

The and In a hostel there are 30 students and If the no. of Students increased by 5 then the expense is increased by 40 per day, But the overage expenditure diminishes by 3. find the original expenditure. Sun No Avg AMX 307 302+40 35 x-3 352-105=30x+40 $\chi = 29$ 0 -30×29=870 -OS. A bateman has a Certain average of runs for 16 = innings, In the 17th inning, he makes a score of 85 tune there by increasing the average by 3. What is the aug. of 17 innings? 1 No Avg Sum 16A 16 A 16A +85 17 A+3 1 4 17(A+3) = 16A+85 4 A = 34 4 9 7th inning 9 = A + 39 = 34+3=37 PAR 1 200 (Carpe

(3. If a batoman score 36 runs in his 18th innings so that his average is reduced by 3 run. Find the M overage of batoman upto 18th inning.

CAT

0

Sum Avg No 17A 17A+36 A-3 18

> 18A-SY = 17A+36 A = 922 90

A - 3 = 90 - 3= 87

3. A baller whose balling average is 12.4 runs/wicket. He played his next meitch and takes Swickets for 26 runs; therefore his average is reduced by 0.4. Find the total no. of wickets taken by the baller.

Sol

No Aug Sum 2+5 12.4-0.4 12x+60 12.42+26

122+60=12.42+26 0.42 = 34 2+5= 85+5=90

S. The average temp. in Delhi for the first four days of the month was reported as 58°C. It reported as 60°c for 2nd, 3rd, 4th and 5th days. The ratio of the temperature of 1st and 5th day was 7:8. Find the temperature on the first day. Sum No Ang 232 58 60 240 2,3,4,5 8°C 1,5 8 7->8×7=56 5 8 -> 64°C d. 877 35 80 977 $3 \Rightarrow \frac{8}{2} \times 3 = 12^{\circ} c$ $5 \rightarrow \frac{8}{2} \times 5 = 20^{\circ} c$ of FTT 777 9. 6 the friends went to a hostel for taking their lunch.

5 of them Spend Rs 32 each while the 6th person 177 1 817 Spend So more than the owerege expenditure of all 1 the 6 person. Find the total money spend on lusch. MAT? 1 1 Sum 1 Aug NO (4) 160 32 160+g0 = 240+A 5 (4) (6A = 160+A +80 ((04) 5A = 240 (A) A = 48 4 6xA = 48x 6 = 288 6-4

· Bligit Sum If Sum is 9 then Agnore a) 343248x 67-345026 C+ 848 26-13 d) 345236 · It tooth give same answer than we use unit digit rule. 2. 728× 456× 827 0)274467536 6) 27 5537536 0)27 4567536 WY 60 803 7588 -> 15

