

MATHS SPECIAL



PRE + MAINS

LIVE CLASS (ONE TO ONE INTERACTION)

**REGISTRATION
OPEN**

BILINGUAL CONTENT

1 YEAR VALIDITY

INCLUDES

- ☐ LIVE Classes
- ☐ Result Oriented Approach
- ☐ PDF Notes
- ☐ Conceptual Clarity

USEFUL FOR

- ☐ SSC EXAMS
- ☐ BANK EXAMS
- ☐ CSAT
- ☐ STATE GOVT. EXAMS

DOWNLOAD TAIYARI KARO APP TO JOIN THE BATCH



SACHIN BALIYAN SIR

MATHS SYLLABUS



ARITHMETIC:

(SSC/BANK/CUET/CSAT/STATE GOVT)

Time and Work
Pipe and Cistern

Percentage
Profit Loss and Discount
Compound Interest
Simple Interest

Average
Ratio and Proportion
Based of Ages
Partnership
Mixture and Alligation

Time Speed And Distance
Train
Race
Boat and Stream

BANK:

Number Series
Quadratic Equation
Simplification
Approximation

Data Interpretation

Mensuration

Permutation
Combination
Probability

SSC:

Number System
LCM + HCF

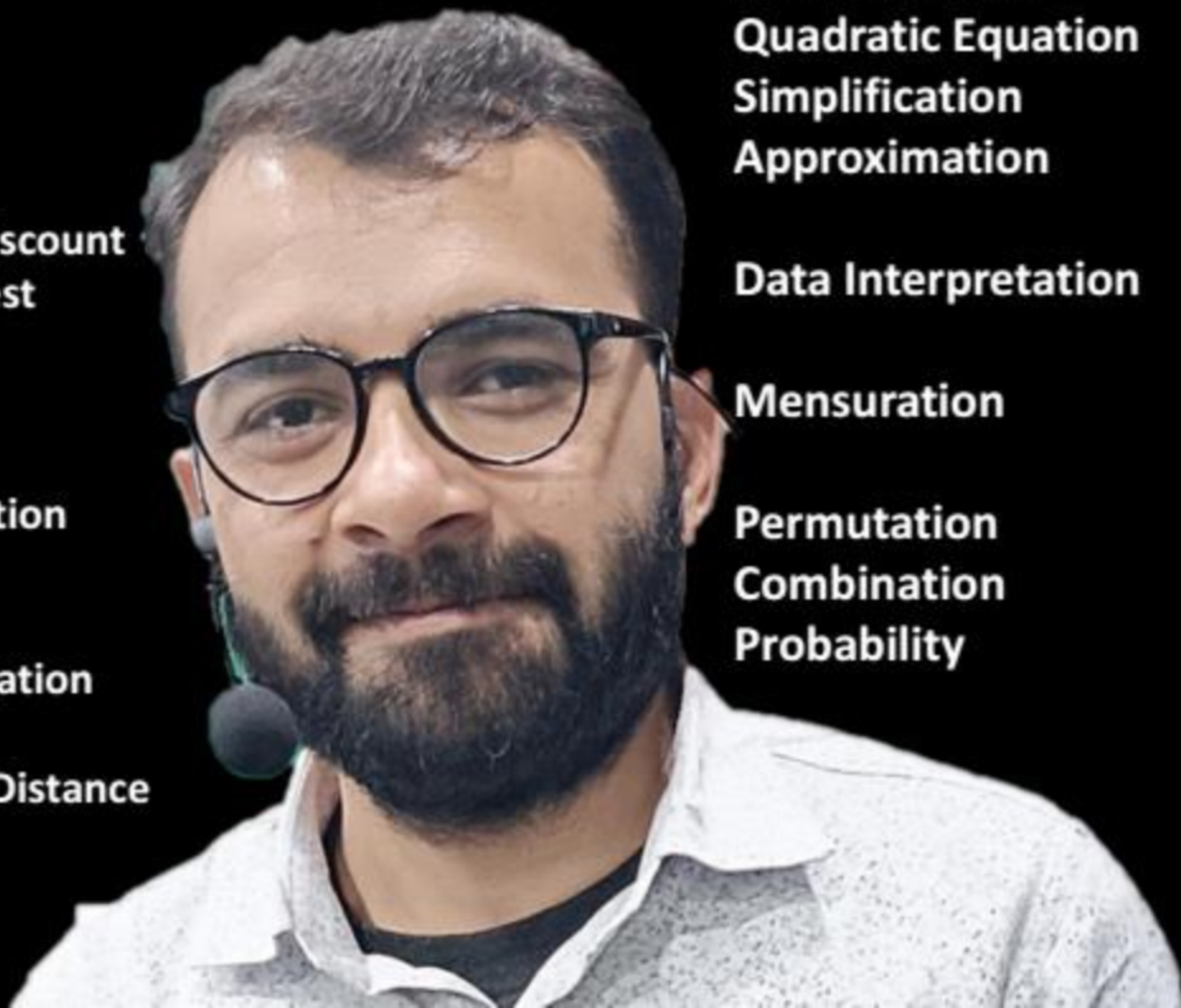
Surds
Indices
Algebra

Trigonometry
Height and Distance

Geometry

Mensuration-2D
Mensuration-3D

Co-ordinate Geometry



AVERAGE

$$\boxed{1^2 + \dots + 20^2}$$

Avg

Number

Natural

NUMBERS BASED-2

even
odd

| NO. OF QUESTIONS | CLASS NUMBER | CLASS DURATION |
|------------------|--------------|----------------|
| 15 Questions | DAY - 2 | 1 HOURS |



AVERAGE:

$$\text{Average} = \frac{\text{Sum of terms}}{\text{Number of terms}}$$

Average = Equal Distribution (Balancing Point)

1 ————— 50 Nat $\frac{1+n}{2}$
 2 4 6 50 even 1+n
 1+3+5 ————— odd (n)

Based on Numbers

(Having Same Difference)

~~100~~ ~~200~~
 Aug 22

$$\frac{28}{2} = 14$$

#

12 14 16

$$\text{Avg} = \frac{\text{Sum}}{N} \Rightarrow$$

$$\frac{42}{3} = 14$$

20 24 28 32 36

$$\text{Avg} = \frac{\text{Sum}}{N} = \frac{140}{5}$$
$$28$$

$$\frac{56}{2} = 28$$

#

✓ 10, 12, (14), 16, 18, ✓

$$\text{Avg} = \frac{\text{Sum}}{N}$$

#

✓✓ 10, (12, 14), ✓✓ 16

$$\text{Avg} = \frac{\text{Sum}}{2} = \frac{52}{2}$$

(13) ✓✓

$$= \frac{70}{5}$$

(14) ✓✓

(13) ✓

#

Arg

=

Middle term

if term are in AP
or

having same
difference

OR

$$\frac{a + l}{2}$$

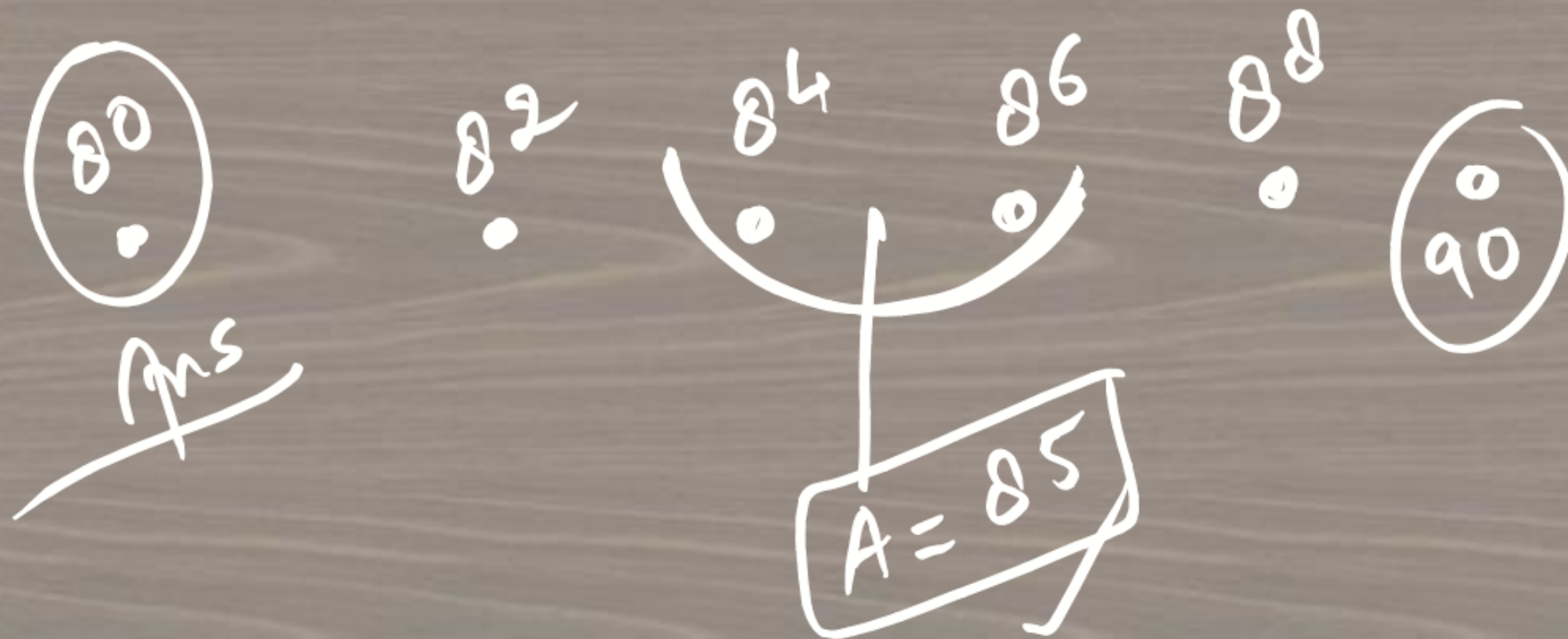


If the average of 6 consecutive even numbers is 85 then find what is the smallest number ?

यदि 6 क्रमागत सम संख्याओं का औसत 85 है, तो सबसे छोटी संख्या ज्ञात कीजिए?

- (a) 80 (b) 81
(c) 71 (d) 76
(e) None of these

Avg = middle term



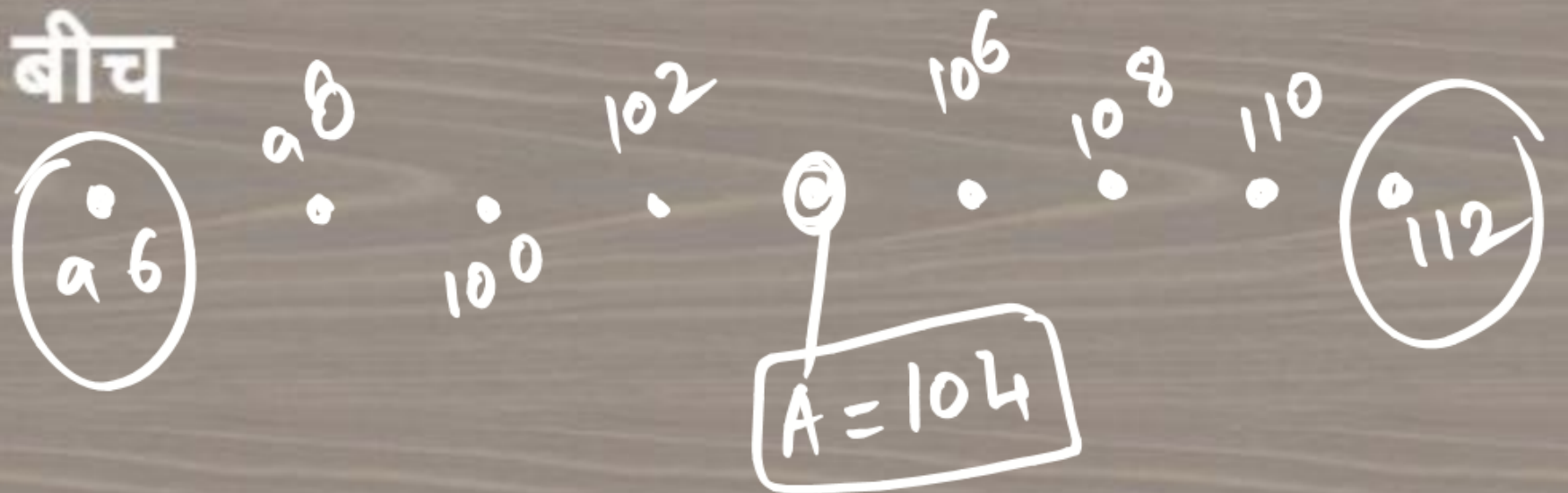


If the average of 9 consecutive even number is 104 then what is the difference between 1st and last no ? यदि 9 क्रमागत सम संख्याओं का औसत 104 है, तो पहली और अंतिम संख्या के बीच का अंतर क्या है?

- (a) 8 (b) 80 (c) 16
(d) 18 (e) None of these

$$\text{Ans} = 112 - 96 = 16$$

Ans





The average of 9 consecutive odd no's is 51. Find the difference between smallest & largest ?

लगातार 9 विषम संख्याओं का औसत 51 है। सबसे छोटी और सबसे बड़ी के बीच का अंतर ज्ञात कीजिए?

(a) 14

(b) 16

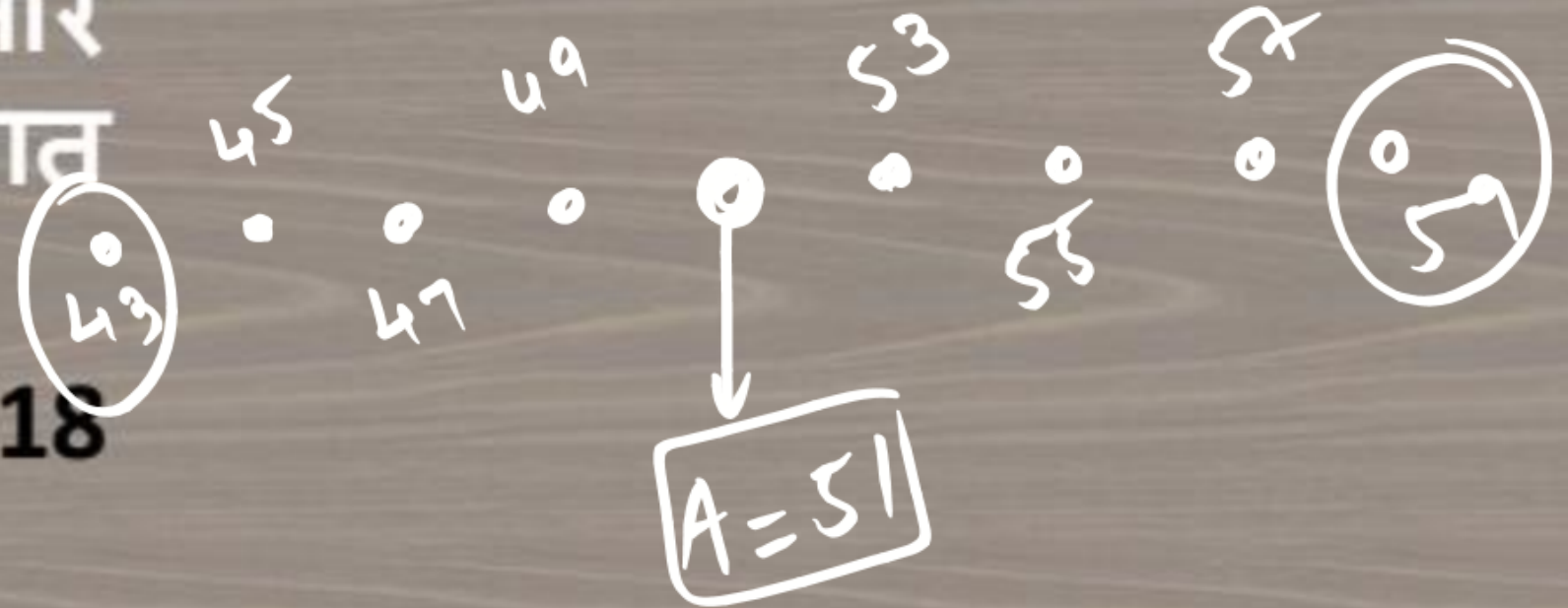
(c) 18

(d) 20

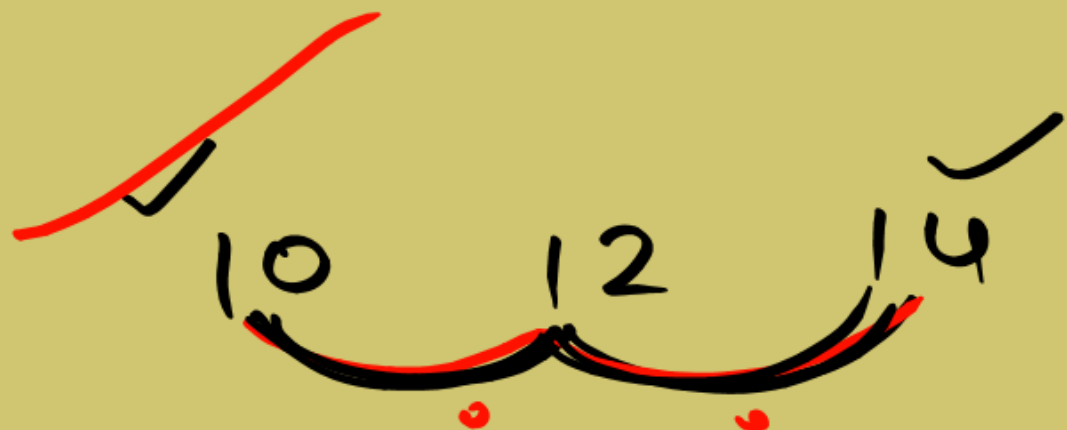
(e) None of these

~~$8 \times 2 = 16$~~

$Ans = 59 - 43 = 16$



③



$$\underline{D=4}$$

④



$$\underline{D=6}$$

⑤



$$\underline{D=8}$$

$$n_0 = n$$

$$\text{Gap} = (n-1)$$

$$Q = 2(n-1)$$

Average-2 (Basic Question)

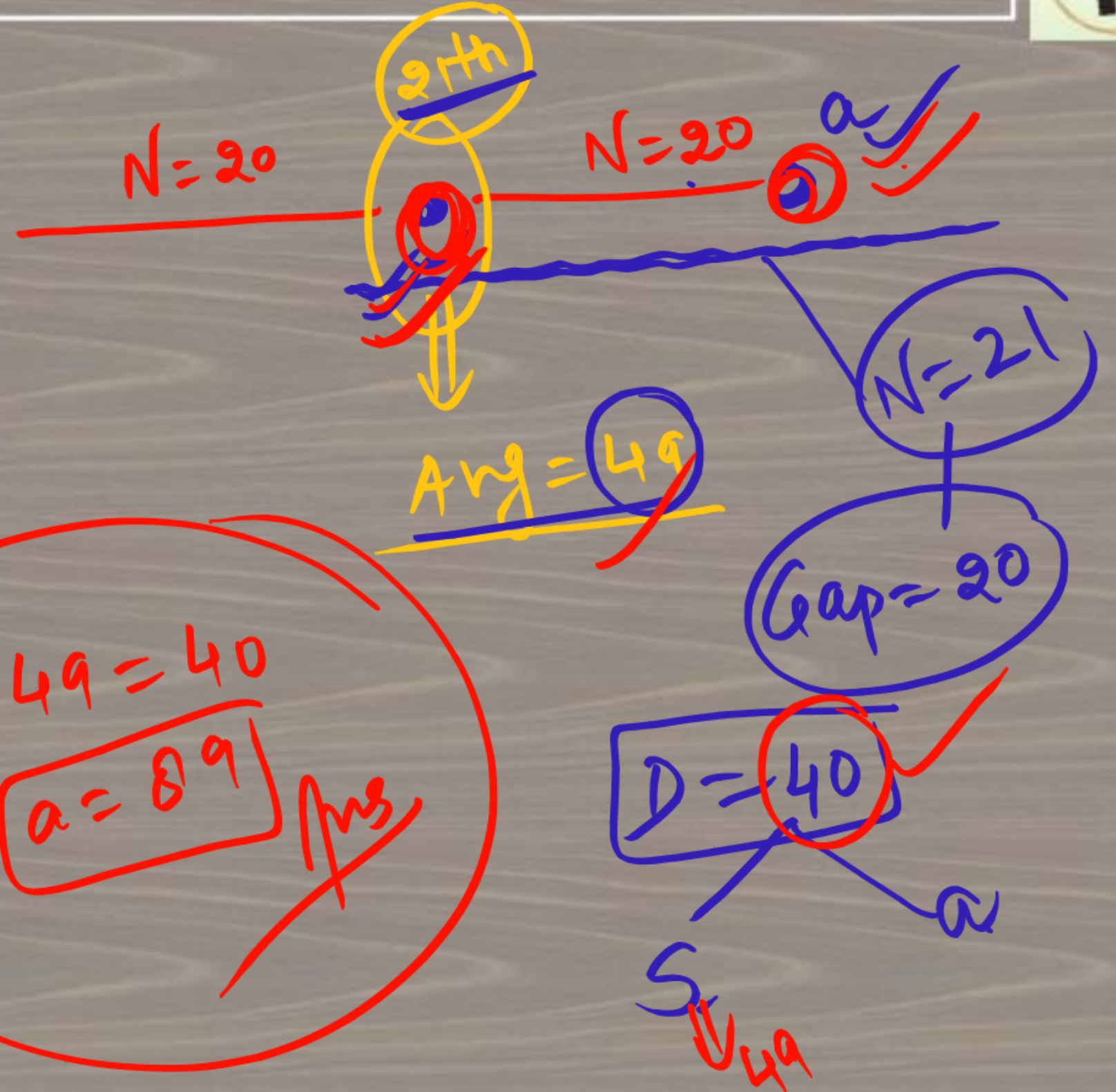
MATHS WITH SACHIN BALIYAN SIR

If the average of **41** consecutive odd numbers is **49** then what is the largest number ? यदि 41 क्रमागत विषम संख्याओं का औसत 49 है तो सबसे बड़ी संख्या क्या है?

- (a) 80 (b) 81 (c) 71
(d) 89 (e) None of these

$$a - 49 = 40$$

$$a = 89 \quad \text{Ans}$$





What will be the average of even number between 11 and 63 ? 11 और 63 के बीच सम संख्या का औसत क्या होगा?

- (a) 50 (b) 31 (c) 37
(d) 63 (e) None of these

⑪ ————— 63

⑫ 12, 14, - 0 - - - 62

$A = \text{middle no.}$
OR
$$\frac{a+l}{2} = \frac{12+62}{2}$$

$$\frac{74}{2} = 37$$



What is the average of the first six (positive) odd numbers each of which is divisible by 7? पहली छह (धनात्मक) विषम संख्याओं का औसत क्या है, जिनमें से प्रत्येक 7 से विभाज्य है?

(a) 42

(b) 43

(c) 47

(d) 49

(e) None of these

7, 14, 21, - - - - -

7, 21, 7×5 , 7×7 , 7×9 , 7×11

$$A = \frac{7 + 77}{2} = \frac{84}{2} = 42$$

OR

$$A = \frac{35 + 49}{2} = \frac{84}{2} = 42$$

7x1, 7x3, 7x5, 7x7, ... 6 Terms

7 [1, 3, 5, 7, ... 6 Terms]

Arg = n
 $= 6 \times 7$

42 Ans

Find the average of first 14 even multiples of 15? 15 के प्रथम 14 सम गुणजों का औसत ज्ञात कीजिए?

- (a) 210 (b) 235
(c) 196 (d) 225
(e) None of these

15, 30, 45, 60, ...

✓✓✓
30, 60, 90, ... 14 Terms

30 [1, 2, 3, ... 14 Terms]

$$A = \frac{1+n}{2} = \frac{15}{2}$$

~~$\frac{15}{2} \times 30$~~



Find the average of first 20
multiples of 17? 17 के
प्रथम 20 गणजों का
औसत ज्ञात कीजिए?

- (a) 357 (b) 340
(c) 178.5 (d) 225
(e) None of these

$17, 17 \times 2, \dots \dots \dots 20^{\text{Term}}$

$17 \left[1, 2, 3, \dots \dots \dots 20^{\text{Term}} \right]$

$A = \frac{1+pn}{2} = \left(\frac{21}{2} \right) \times 17$

Average-2 (Basic Question)

MATHS WITH SACHIN BALIYAN SIR

If the average of certain first consecutive Natural numbers is 10.5 then what is their sum? यदि कुछ प्रथम क्रमागत प्राकृत संख्याओं का औसत 10.5 है तो योग क्या है?

- (a) 180 (b) 105
- (c) 210 (d) 276
- (e) None of these

$$1 + 2 + 3 + \dots + n$$

$$A = 10.5$$

$$\frac{1+n}{2} = 10.5$$

$$1+n = 21$$

$$n = 20$$

$$A = \frac{\text{Sum}}{N}$$

$$\text{Sum} = 10.5 \times 20$$

If a, b, c, d and e are five consecutive even numbers. If the average of a and e is 46 then what is the largest number? यदि a, b, c, d और e लगातार पाँच सम संख्याएँ हैं। यदि a और e का औसत 46 है तो सबसे बड़ी संख्या क्या है?

(a) 50 ✓

(b) 61

(c) 71

(d) 76

(e) None of these

Handwritten solution:

Let the numbers be: a, b, c, d, e

Given: Average of a and e is 46.

Formula: $\frac{a + e}{2} = 46$

Calculation: $a + e = 46 \times 2 = 92$

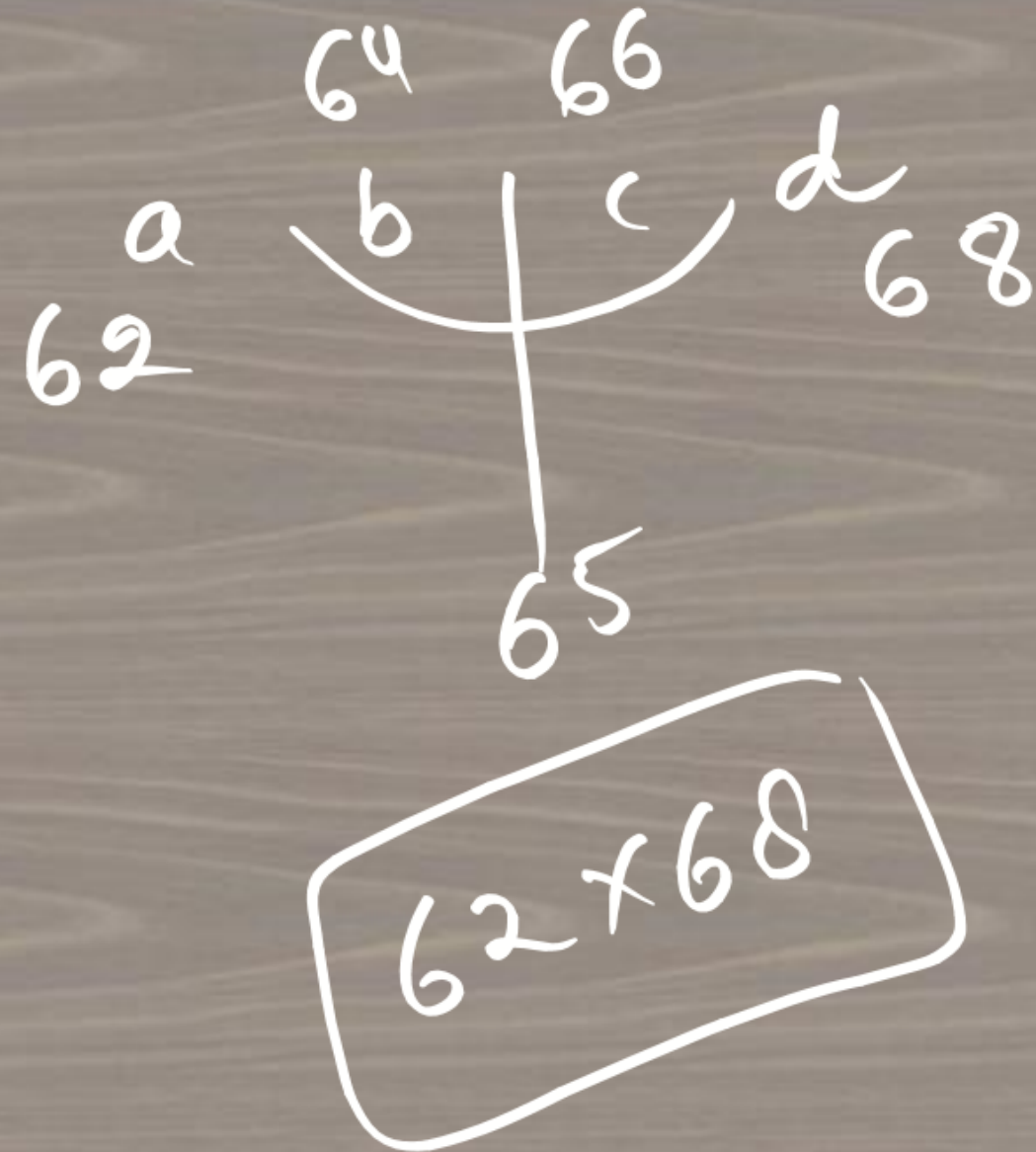
Since a and e are the first and last terms of an arithmetic progression, the sum of the first and last terms is equal to the sum of the second and second-last terms, and so on.

Therefore, $a + e = 92$

Since a and e are even numbers, the largest number e is 50.

If a , b , c and d are four consecutive Even Numbers while their average is 65 what is the product of a and d ? यदि a , b , c और d चार क्रमागत सम संख्याएँ हैं जबकि उनका औसत 65 है, तो a और d का गुणनफल क्या होगा?

- (a) 4280 (b) 4281
- (c) 4216 (d) 3076
- (e) None of these





If a, b, c, d and e are consecutive even numbers then what is their average? यदि a, b, c, d और e क्रमागत सम संख्याएँ हैं तो उनका औसत क्या है?

- (a) a (b) $a+2$
- (c) $a+4$ (d) $a+6$
- (e) None of these

a, b, c, d, e

H.W



If the average of five consecutive numbers starting with m is n , then what is the average of six consecutive numbers starting with $m + 2$? यदि m से शुरू होने वाली पांच क्रमागत संख्याओं का औसत n है, तो $m + 2$ से शुरू होने वाली छह क्रमागत संख्याओं का औसत क्या है?

Pr. 10

- (a) $n + 2$ (b) $n + 2.5$
- (c) $n + 3$ (d) $n + 6$
- (e) None of these



Weight of 5 members out of 18 member team are calculated if average weight is calculated after measuring the weight of each member each time, then it is one more than the previous average weight . Find the difference of weight of 1st and last member ? 18

सदस्यीय टीम में से 5 सदस्यों के वजन की गणना की जाती है यदि प्रत्येक सदस्य के वजन को हर बार मापने के बाद औसत भार की गणना की जाती है, तो यह पिछले औसत वजन से एक अधिक है। पहले और अंतिम सदस्य के भार का अंतर ज्ञात कीजिये?

Handwritten signature

- (a) 8 (b) 10 (c) 12 (d) 16
(e) None of these



There are six consecutive odd numbers in the increasing order if the difference between the average of the square of the last four numbers and the first four numbers is 64 then find the average of all the numbers? बढ़ते क्रम में छह क्रमागत विषम संख्याएँ हैं, अंतिम चार संख्याओं के वर्ग के औसत और पहली चार संख्याओं के वर्ग के औसत का अंतर 64 है तो सभी संख्याओं का औसत ज्ञात कीजिए?

- (a) 8 (b) 18 (c) 11 (d) 16
(e) None of these

