

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

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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

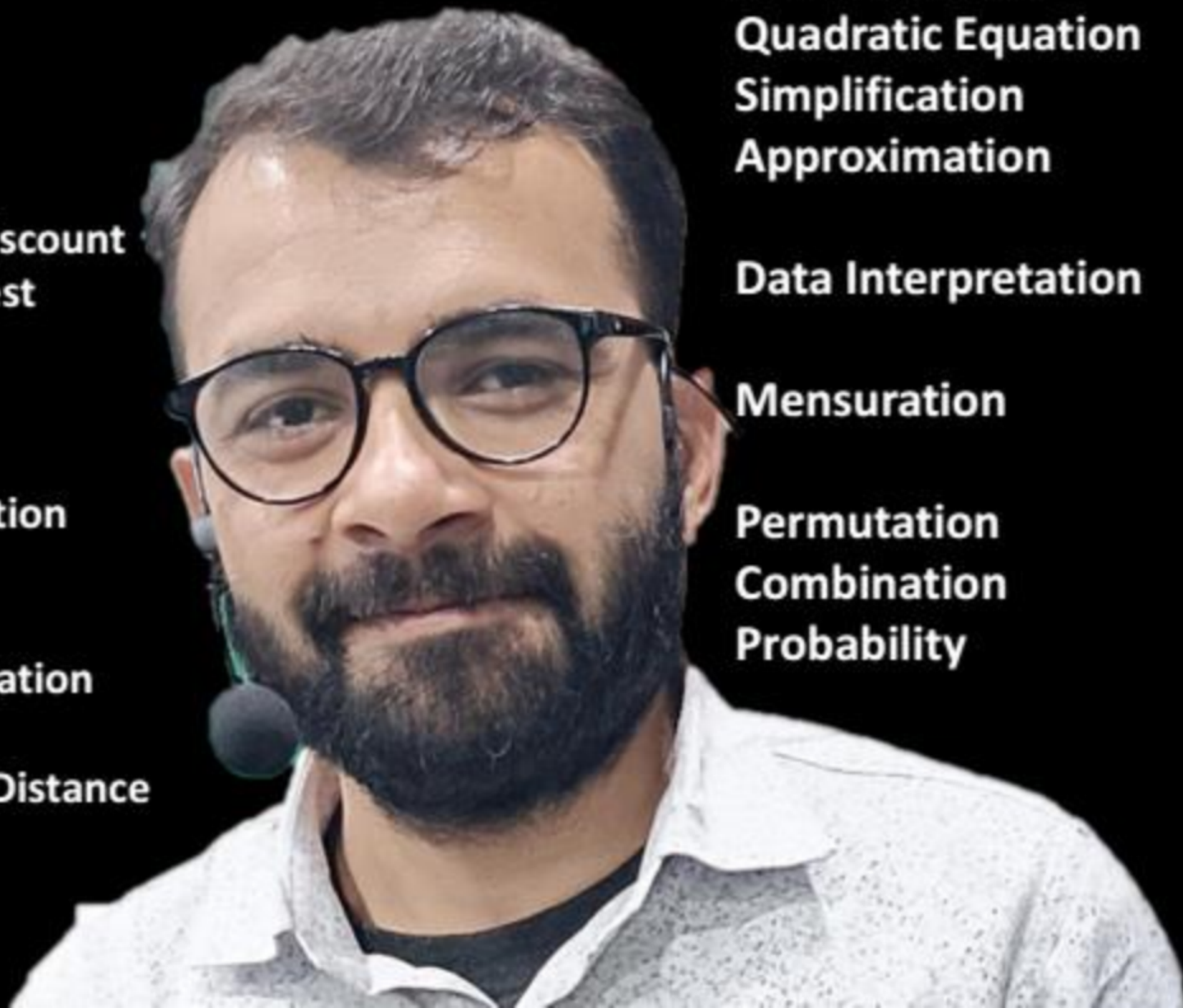
Surds
Indices
Algebra

Trigonometry
Height and Distance

Geometry

Mensuration-2D
Mensuration-3D

Co-ordinate Geometry



INTEREST(ब्याज)

Terms Used & Concept

Principal प्रधान
Rate दर
Time समय
Amt मि. १००५५

$$\text{Amt} = P + \text{Int}$$

Terms Used & Concept

$$R = 20\% \cdot \text{PA} \checkmark$$

$\frac{1}{5} \rightarrow \text{int} + \underline{\underline{15\text{M}}}$

$\frac{1}{5} \rightarrow p$

$$R = 20\% \cdot \underline{\text{PMF}}_{\text{int}} + \underline{\underline{(6\text{Month})}}$$

$\frac{1}{5} \rightarrow p$

$$R = 20\% \cdot \cancel{PQ} \rightarrow \text{Int}(\underline{1Q \text{ or } \underline{3 \text{ month}}})$$

$\frac{1}{5} \rightarrow P$

$$1Q = 3 \text{ month}$$

$$1 \text{ year} = 4Q$$

$$R = 20\% \cdot \cancel{\text{PM}} \rightarrow \text{int}(\text{1 month})$$

$\frac{1}{5} \rightarrow P$

How to change Rate:-

$$R = 20\% \cdot \cancel{PA}$$

$$\left(\frac{1}{5}\right) \rightarrow P$$

$$R = 10\% \cdot \cancel{P124}$$

$$\left(\frac{1}{10}\right) \rightarrow P$$

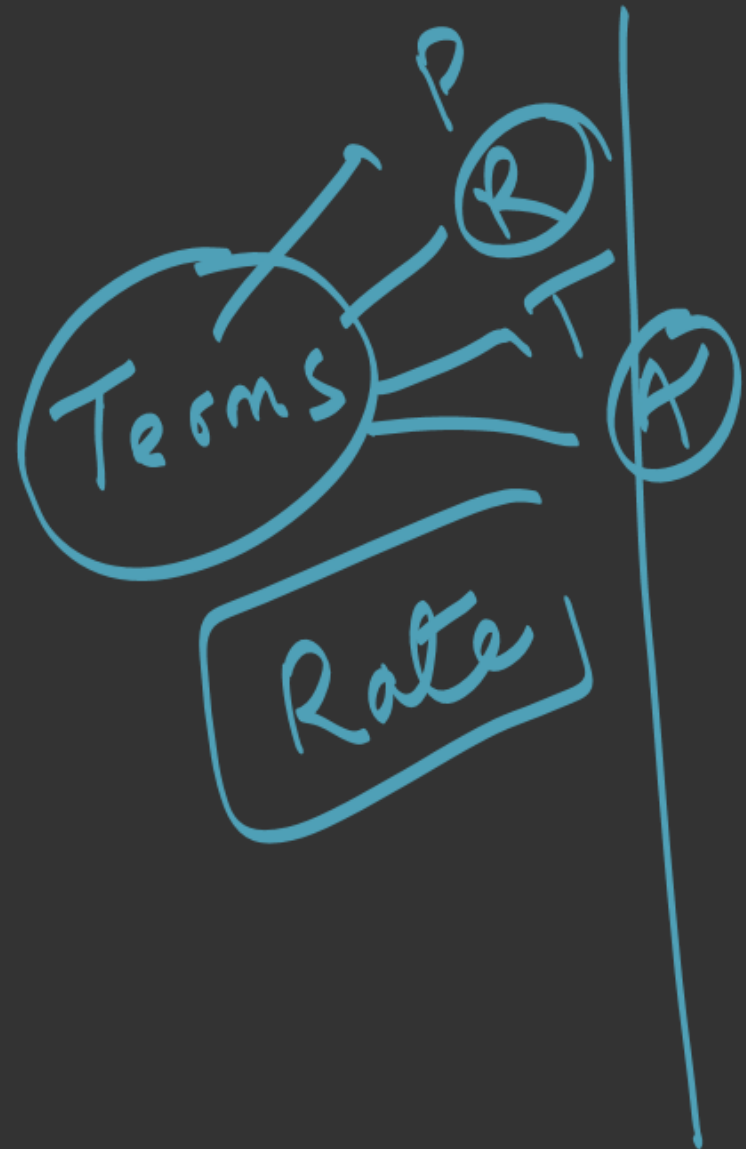
~~Compound~~

$$R = 5\% \cdot \cancel{PQ}$$

$$\left(\frac{1}{20}\right) \rightarrow P$$

$$R = \frac{5}{3}\% \cdot \cancel{PM}$$

$$\left(\frac{1}{60}\right) \rightarrow P$$



Int

Simple Int
ସରଳ ଲାଭ

P always

Compound Interest

ସଂଯୁକ୍ତ ଲାଭ

$P + \text{Int}$

Compound Interest

P + int

$$\frac{1000}{25} : \frac{1440}{36}$$

$$\frac{1}{5}$$

$$+20\%$$
$$900$$

$$1200$$

$$240$$

$$+20\%$$

$$1440$$

Successive Method

$$\frac{1}{5}$$

$$1000$$

after 2 yrs

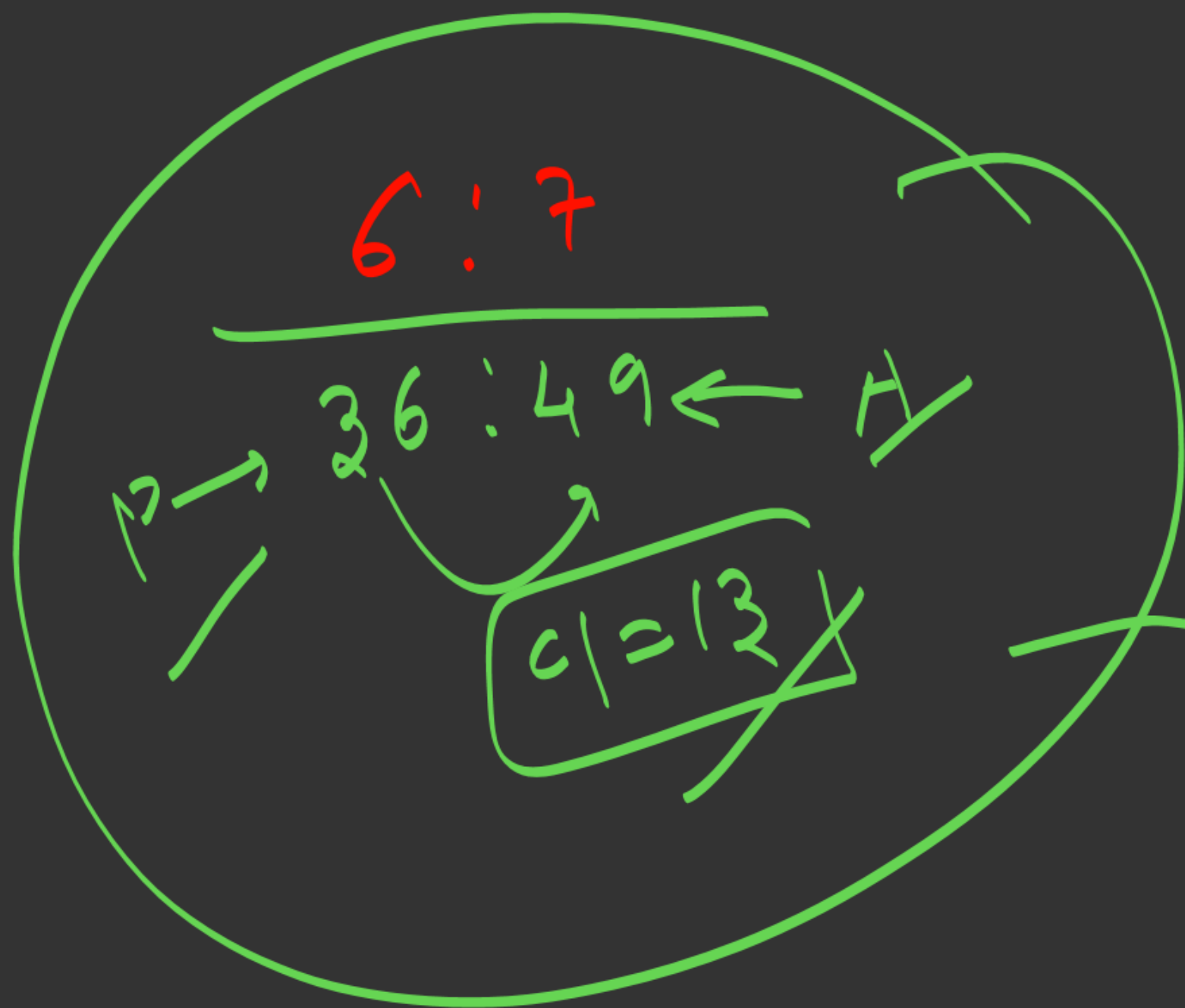
$$5 : 6$$

$$295$$

$$36$$

$$CI = 11$$

$$CI$$



$$16\frac{2}{3}\% = \frac{1}{6} \rightarrow \frac{1}{6} \rightarrow \text{wt}$$

$\rightarrow P$

802 ✓

COMPOUND INTEREST



INTRODUCTION

Compound Interest (CI) is the interest calculated on **both** the principal and the interest, after a certain period of time.

Successive Method

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

CI – 1 (Successive Method)

MATHS WITH SACHIN BALIYAN SIR





If compound interest on a certain sum of money for 2 years at $16\frac{2}{3}\%$ pa is Rs 16.90 . While interest being compounded annually then Principal is ? यदि $16\frac{2}{3}\%$ प्रति वर्ष पर 2 वर्ष के लिए एक निश्चित राशि पर चक्रवृद्धि ब्याज 16.90 रु है । जबकि ब्याज वार्षिक रूप से चक्रवृद्धि हो रहा है, तब मूलधन बताओ?

- (a) 46.8 (b) 224 (c) 468
(d) 18.58 (e) None of these

$$\frac{1}{6}$$

$$6 : 7$$

$$36 : 49 \leftarrow A$$

$$CI = 13$$

$$P = 1.3 \times 36$$

Ans

$$16.9$$

1.3 Rs



If compound interest on a certain sum of money @ $12\frac{1}{2}\%$

pa for 2 year is Rs 5440 then find the Principal amount? यदि

2 वर्ष के लिए एक निश्चित राशि पर @ $12\frac{1}{2}\%$ प्रति वर्ष की दर से चक्रवृद्धि ब्याज 5440 रुपये है तो मूलधन राशि ज्ञात कीजिए?

A) Rs. 38450

B) Rs. 20480

C) Rs. 51420

D) Rs. 44150

$$\begin{array}{r}
 8 : 9 \\
 \hline
 64 : 81 \\
 \times 320 \\
 \hline
 20480
 \end{array}$$

Handwritten calculation showing the ratio $8:9$ and $64:81$. A box contains the result 20480 . A large oval contains the calculation $5440 - 320 = 5120$.



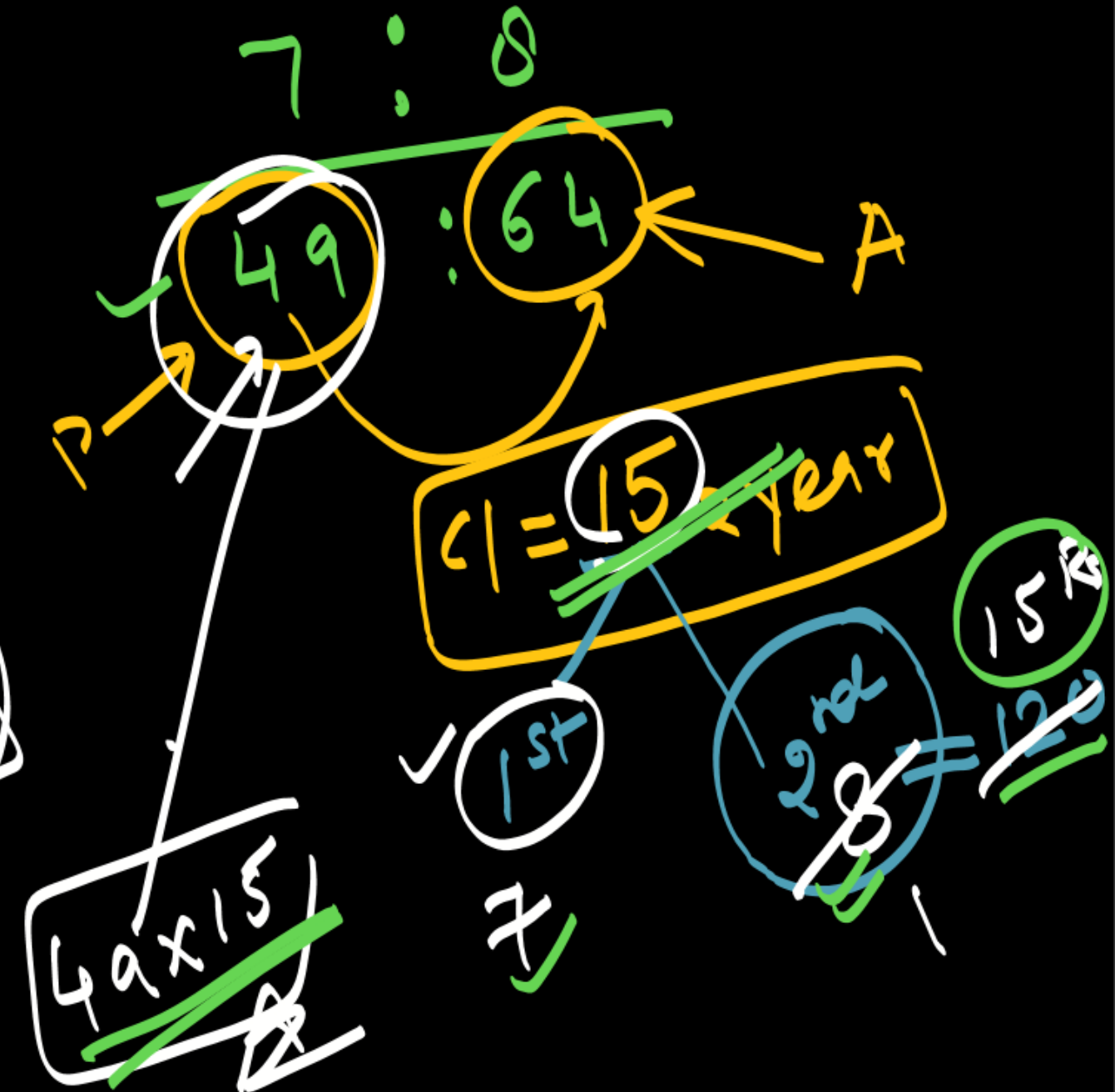
If compound interest of 2nd year on a certain sum of money given @ $14\frac{2}{7}\%$ pa is Rs. 120 then what will be the Principal amount? यदि एक निश्चित राशि पर दूसरे वर्ष का चक्रवृद्धि ब्याज $14\frac{2}{7}\%$ प्रतिवर्ष की दर से 120 रु है। तो मूलधन राशि क्या होगी?

A) Rs. 735

B) Rs. 840

C) Rs. 514

D) Rs. 441





The difference between simple interest and compound interest of a certain sum of money at 15% per annum for 2 years is Rs 54. Then the sum is : यदि 2 साल के लिए प्रति वर्ष 15% पर एक निश्चित राशि के साधारण ब्याज और चक्रवृद्धि ब्याज के बीच का अंतर 54 रु है। वह मूल राशि क्या है ?

A) Rs. 3680

B) Rs. 2400

C) Rs. 1400

D) Rs. 1170

$$SI = \frac{400 \times 15 \times 2}{100}$$

$$20 : 23$$

$$400 : 529 \leftarrow A$$

$$unit = \frac{54}{6}$$

$$CI = 129$$

$$SI = 60 \times 2 = 120$$



If the difference between the compound interest and the simple interest on a certain sum for 2 yr at $18\frac{3}{4}\%$ per annum is Rs 72. then the sum is ? यदि 2 साल के लिए प्रति वर्ष $18\frac{3}{4}\%$ पर एक निश्चित राशि के साधारण ब्याज और चक्रवृद्धि ब्याज के बीच का अंतर 72 रु है। वह मूल राशि क्या है ?

A). Rs 2800

B). Rs 2048

C). Rs 3420

D). Rs 2250

Handwritten solution:

$$SI = \frac{P \times R \times T}{100}$$

Given: $SI = 72$, $R = 18\frac{3}{4}\%$, $T = 2$

$$72 = \frac{P \times 18\frac{3}{4} \times 2}{100}$$

$$72 = \frac{P \times \frac{75}{4} \times 2}{100}$$

$$72 = \frac{P \times 75}{200}$$

$$P = \frac{72 \times 200}{75}$$

$$P = 1920$$

Answer: Rs 1920



If the difference between the compound interest and the simple interest on a certain sum for 2 yr @ $14\frac{2}{7}\%$ pa for 1st year And @ 15% per annum for 2nd year is Rs. 300. then sum is ? यदि पहले वर्ष के लिए $14\frac{2}{7}\%$ प्रति वर्ष और दूसरे वर्ष के लिए @ 15% प्रति वर्ष पर दिए गए 2 वर्ष के लिए चक्रवृद्धि ब्याज और साधारण ब्याज के बीच का अंतर के लिए 300 रु है। तो मूल राशि क्या है?

A). RS.50000
RS.14000 ✓

B). RS.15000
D). RS.15250

C).

$$SI = 140 \times \frac{1}{7} = 20$$

$$140 \times 3 = 420$$

$$21$$

$$\begin{array}{r} 7 : 8 \\ 20 : 23 \\ \hline 140 : 184 \end{array}$$

Unit

$$\frac{300}{100}$$

$$CI = 44$$

$$SI = 41$$



Find compound interest on Rs. 14580 at $11\frac{1}{9}\%$ per annum for 1 years 73 days compounded annually?

1 वर्ष 73 दिनों के लिए $11\frac{1}{9}\%$ प्रति वर्ष की दर से 14580 रुपये पर चक्रवृद्धि ब्याज ज्ञात कीजिये?

- A) 1980
C) 1709

- B) 2820
D) 2109

Handwritten solution for the compound interest problem:

Rate: $11\frac{1}{9}\%$ (labeled as $\frac{1}{9}$ in Hindi)

Time: 1 year 73 days

Principal (P): 14580

Ratio: $9:10$ and $45:46$

Calculation steps:

- $14580 \times \frac{46}{45} = 14880$
- $14880 \times \frac{46}{45} = 15264$
- $15264 \times \frac{46}{45} = 15654.4$
- Compound Interest (CI) = $15654.4 - 14580 = 1074.4$

Final Answer: CI = 1074.4



If compound interest on a certain sum of money at 15% per annum for 1 years 4 months is Rs. 3320 compounded annually. Find the sum of money ? अगर 1 साल 4 महीने के लिए 15% प्रति वर्ष की दर से एक निश्चित राशि पर चक्रवृद्धि ब्याज 3320 रुपये है। धन ज्ञात कीजिये?

A) 16000 ✓

B) 8000

C) 15000

D) 18000

