# COMPOUND INTEREST

1. **What will be the compound interest in 2 years on a sum of Rs 7500 at 4%?**
रु. 7500 की राशि पर 4% की दर से 2 वर्षों में चक्रवृद्धि ब्याज क्या होगा?

(a) 618 (b) 612 (c) 624 (d) 606

$P = 7500$
$r = 4\%$
$T = 2$ years

4% 4%
300 (300+12)
$P = 7500 \longrightarrow 7500 + 300$

Total CI = 300 + 312
= 612

OR

25 : 26
25 : 26
625 676
51

$P = 625$ unit $\longrightarrow 7500$
1 unit $\longrightarrow \frac{7500}{625}$
$CI = 51$ unit $\longrightarrow \frac{7500}{625} \times 51$
$\Rightarrow 612$

OR

$r = 4\% = \frac{1}{25}$
$T = 2$ years

625 unit $\xrightarrow{\times 12}$ 7500

SI = 25 25
1

CI = $51 \times 12 = 612$ Ans

2. **What will be the compound interest on an amount of Rs. 7200 at the rate of 5% per annum for 2 years?**

रु. 7200 की राशि पर 5% प्रतिवर्ष की दर से 2 वर्ष के लिए चक्रवृद्धि ब्याज कितना होगा?

(a) Rs. 841 (b) Rs. 738 (c) Rs. 793 (d) Rs. 812

20 : 21

20 : 21

P = 400 : 441 = A

41 unit

400 unit ⟶ 7200

1 unit ⟶ 18

CI = 41 unit ⟶ 41 × 18

⇒ 738

P = 400

SI = 20 20

1

CI = 41

P = 400 unit ⟶ 7200

1 unit ⟶ 18

CI = 41 unit ⟶ 41 × 18

⇒ 738

3. **What amount at the compound interest for 2 years at the rate of 5% per annum will be Rs 164?**

किस राशि पर 5% वार्षिक ब्याज की दर से 2 वर्ष का चक्रवृद्धि ब्याज रु. 164 होगा?

(a) Rs. 1600 (b) Rs. 1500 (c) Rs. 1400 (d) Rs. 1700

20 : 21

20 : 21

400 441

CI = 41

CI = 41 unit ⟶ 164

1 unit ⟶ 4

P = 400 unit ⟶ 400 × 4

= 1600

P = 400

SI = 20 20

1

CI = 41

$r = 5\% = \frac{1}{20}$

T = 2 year

41 unit ⟶ 164

1 unit ⟶ 4

400 unit ⟶ 1600

2nd year का CI 21 unit ⟶ 21 × 4

84

4. Principal = ?, Time = 2yr, Rate = $12\frac{1}{2}$%, Compound Interest = Rs. 6.80

समय = 2 वर्ष दर = $12\frac{1}{2}$% चक्रवृद्धि ब्याज = रु 6.80 मूल धन = ?

(a) Rs. 15.6 (b) Rs. 25.6 (c) Rs. 20.1 (d) Rs. 24.7

$R = 12\frac{1}{2}\% = \frac{1}{8}$

8 : 9

8 : 9

64 : 81

CI = 17

17 unit ⟶ 6.80

1 unit ⟶ 0.4

P = 64 unit ⟶ 0.4×64

⇒ 25.6

P = 64

8 8

1

CI = 17

CI = 17 unit ⟶ 6.80

1 unit ⟶ 0.4

P = 64 unit ⟶ 0.4×64

= 25.6

5. Rate = $16\frac{2}{3}$%, Time = 2 yr, Compound Interest = ?, Amount = Rs 1470.

दर = $16\frac{2}{3}$% समय = 2 वर्ष, कुल धनराशि Rs. 1470, चक्रवृद्धि ब्याज = ?

(a) 360 (b) 430 (c) 390 (d) 450

$R = 16\frac{2}{3}\% = \frac{1}{6}$

T = 2year

A = 1470

P = 36 unit

1/6 1/6

6 1/6 6

1

CI = 13

A = 39 unit ⟶ 1470

1 unit ⟶ 30

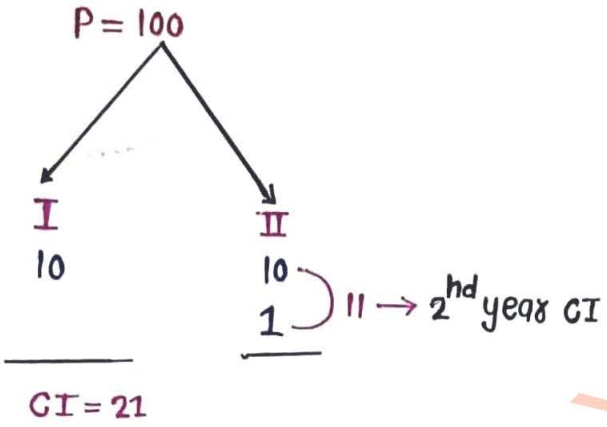
CI = 13 unit ⟶ 30×13 = 390

6. The compound interest for the second year was Rs. 132 at the rate of 10% per annum. What was the sum?

किसी मूल राशि पर 10% प्रतिवर्ष की दर पर दूसरे वर्ष चक्रवृद्धि ब्याज 132 बना। मूल राशि कितनी थी?

(a) 1000 (b) 1320 (c) 1250 (d) 1200

P = 100 unit
CI = 21 unit
SI = 20 unit
CI - SI = 1 unit
2

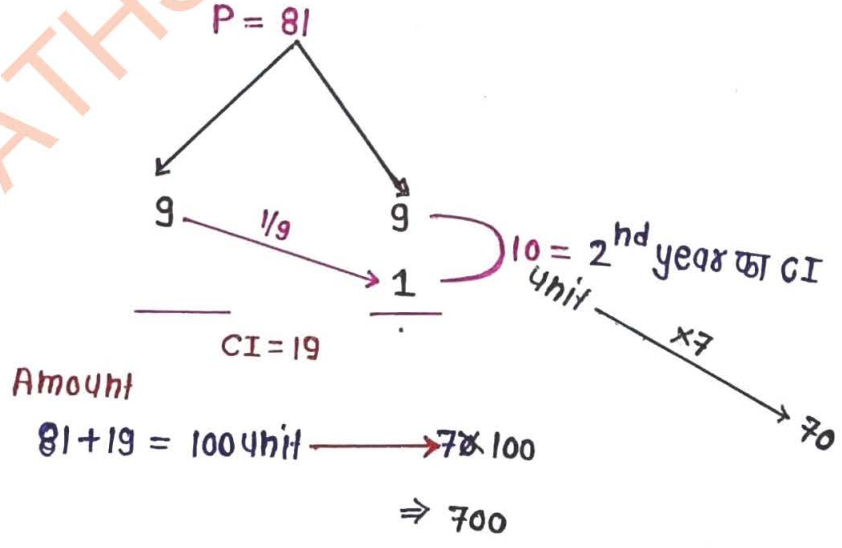



2nd year CI = 11 unit ⟶ 132 रु.
1 unit ⟶ 12 रु.
P = 100 unit ⟶ 1200 रु.

7. Amount = ?, Rate = $11\frac{1}{9}$%, Time = 2 yr, CI of 2nd yr. = Rs. 70

कुल धनराशि = ?, दर $11\frac{1}{9}$%, समय = 2 वर्ष, 2 वर्ष का चक्रवृद्धि ब्याज = Rs. 70

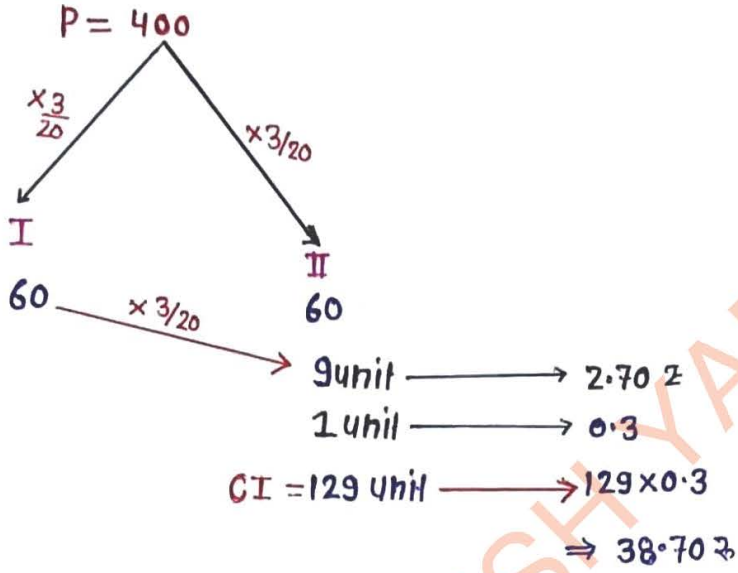
(a) 900 (b) 800 (c) 500 (d) 700



8. Rate = 15%, Time = 2 yr. (CI – SI) = Rs. 2.70, CI = ?

दर = 15% समय = 2 वर्ष, (चक्रवृद्धि ब्याज - साधारण ब्याज) = Rs. 2.70 तो चक्रवृद्धि ब्याज = ?

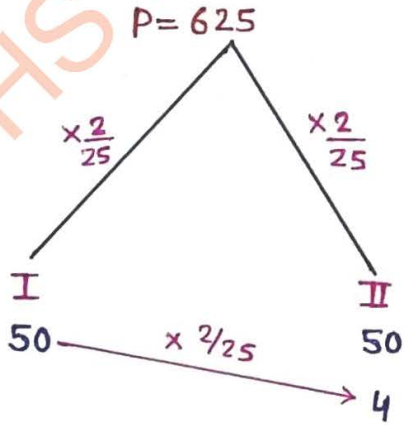
(a) 40.79 (b) 41.80 (c) 38.70 (d) 40.50




9. Principal = Rs. 4000, Rate = 8%, Time = 2 year. Find (CI – SI) = ?

मूलधन = Rs. 4000, समय = 2 वर्ष, दर = 8% (चक्रवृद्धि ब्याज - साधारण ब्याज) = ?

(a) 25.6 (b) 10 (c) 15.5 (d) 20




$P = 625$ unit $\longrightarrow 4000$

$1$ unit $\longrightarrow \frac{4000}{625}$

$CI - SI = 4$ unit $\longrightarrow \frac{4000}{625} \times 4$

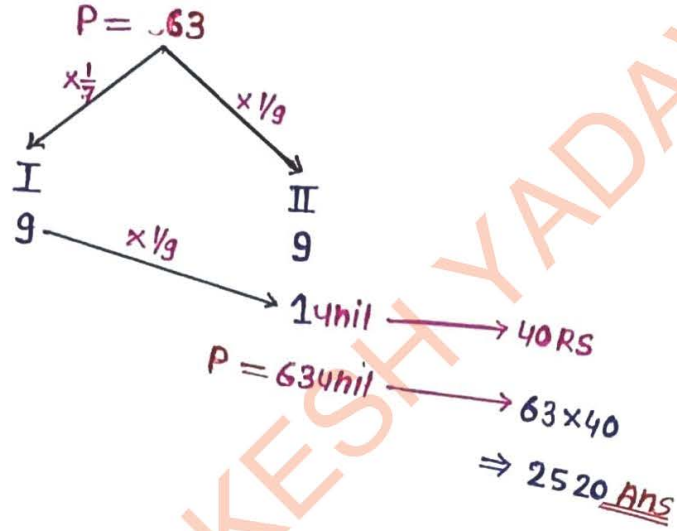
$= 25.6$

10. Principal = ?, Time = 2 yr, CI – SI = Rs. 40, Rate for 1st year = $14\frac{2}{7}$% Rate for 2nd year = $11\frac{1}{9}$%./मूलधन = 2, समय = 2 वर्ष, ( चक्रवृद्धि ब्याज - साधारण ब्याज ) = Rs. 40 ( पहले वर्ष के लिए ) = $14\frac{2}{7}$% तथा R% ( दूसरे वर्ष के लिए ) = $11\frac{1}{9}$%

(a) 3100 (b) 2520 (c) 3090 (d) 2670

P =

$\gamma$ { I = $14\frac{2}{7}\% = \frac{1}{7}$, II = $11\frac{1}{9}\% = \frac{1}{9}$

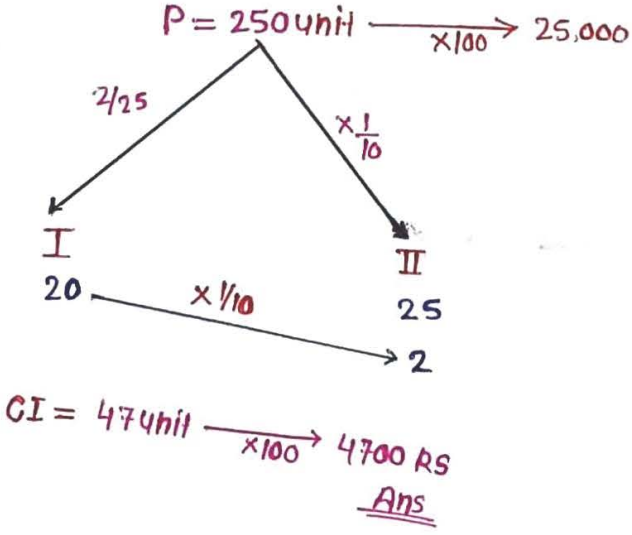



11. The interest on Rs. 25,000 in 2 years compounded annually when the rates are 8% p.a and 10% p.a for two successive years is:/Rs. 25000 पर दो वर्षों का चक्रवृद्धि ब्याज, जब ब्याज की दर क्रमशः 8% और 10% वार्षिक रूप से संयोजित होती है।

(a) Rs. 3,994 (b) Rs. 4,512 (c) Rs. 5,040 (d) Rs. 4,700

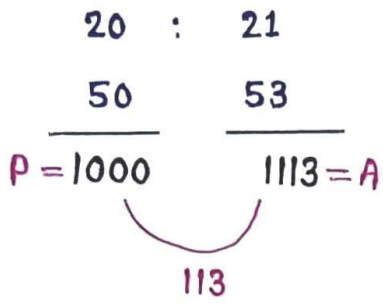
P = 250 unit (माना)

$\gamma$ { 8% = $\frac{2}{25}$, 10% = $\frac{1}{10}$



12. A invested an amount of x rupees in a bank for 2 years which gave 5% interest in year 1 and 6% interest in year 2. The amount received after 2 years is Rs 24, 486. What is the value of x?/A ने एक बैंक में x रुपये की राशि का निवेश 2 वर्ष के लिए किया जिसने उन्हें पहले वर्ष में 5% और दूसरे वर्ष में 6% की दर से ब्याज दिया। 2 वर्ष बाद उन्हें 24,486 रु. मिले। x का मान क्या है?

(a) 23000 (b) 22500 (c) 22000 (d) 21500




1113 unit ⟶ 24486

1 unit ⟶ $\frac{24486}{1113}$

1000 unit ⟶ $\frac{24486}{1113} \times 1000$ (1113 × ⋯2 (unit digit)

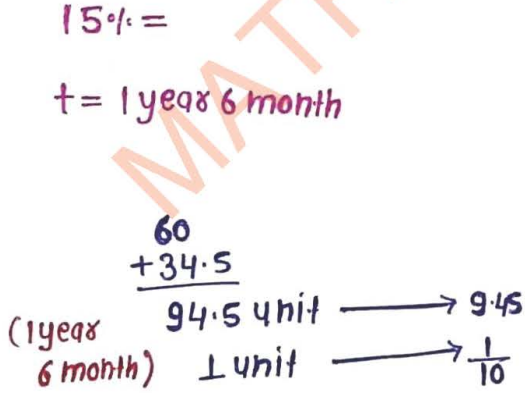
⇒ 22,000

13. Principal = ?, Rate = 15%, Time = 1 year 6 month, Compound Interest = Rs. 9.45
मूलधन = ?, दर = 15%, समय = 1 वर्ष 6 महीने, चक्रवृद्धि ब्याज = Rs. 9.45

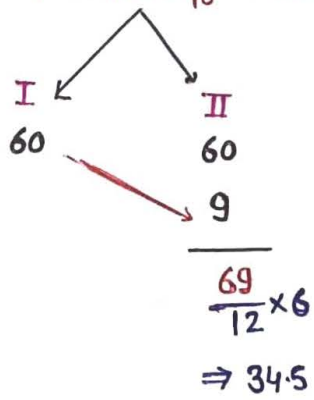
(a) Rs. 50 (b) Rs. 30 (c) Rs. 10 (d) Rs. 40

15% =

t = 1 year 6 month




$P = 400 \times \frac{1}{10} = 40$ Rs Ans




⇒ 34.5

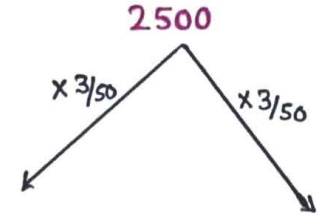
14. **Principal = ?, Time = 1 year 6 month Rate = 6%, CI = Rs. 4590**

मूलधन = ?, समय = 1 वर्ष 6 महिने, दर = 6% चक्रवृद्धि ब्याज = रु. 4590

(a) 80,000 (b) 50,000 (c) 35,000 (d) 60,000

$6\% = \frac{3}{(50)^2}$

T = 2 year (माना)




150 $\xrightarrow{\times 3/50}$ 150

9

$= \frac{159}{12} \times 6$

$\Rightarrow 79.5$

1 year 6 month $\longrightarrow$ 150 + 79.5 = 229.5 unit $\longrightarrow$ 4590

1 unit $\longrightarrow \frac{4590}{229.5}$

25000 unit $\longrightarrow \frac{4590}{229.5} \times 25000$

$\Rightarrow$ 50,000 Ans

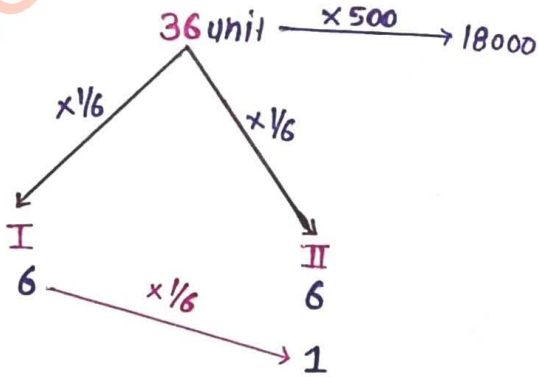
15. **Principal = 18000, Rate = $16\frac{2}{3}\%$, Time = 1 yr. 73 days, Compound Interest = ?**

मूलधन = Rs. 18000, दर = $16\frac{2}{3}\%$ समय = 1 वर्ष, 73 दिन, चक्रवृद्धि ब्याज = ?

(a) 3700 (b) 3800 (c) 4000 (d) 3600

$16\frac{2}{3}\% = \frac{1}{(6)^2}$

T = 2 year (माना)




6 $\xrightarrow{\times 1/6}$ 1

$6 + 1.4 = 7.4$ unit $\xrightarrow{\times 500}$ 18000

$\Rightarrow$ 3700 RS

$= \frac{7}{365} \times 73$

$\Rightarrow 1.4$

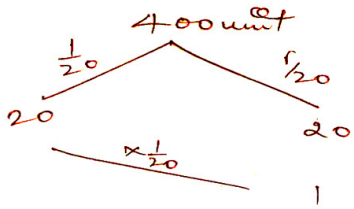
16. **Principal = ?, Rate = 5%, Time = 1 year 73 days, CI = Rs. 302.50**
**मूलधन = ?, समय = 1 वर्ष 73 दिन, दर = 5%, चक्रवृद्धि ब्याज = Rs. 302.50**
**(a) 5,000 (b) 4,000 (c) 3,500 (d) 6,000**

$R = 5\% = \frac{1}{20}$

T = 1 year 73 days

CI = 302.50

P = ?




CI for 73 days $= \frac{21}{365} \times 73$

$= 4.2$ unit

CI → 24.2 unit = 302.50

400 unit $= \frac{302.50}{24.2} \times 400$

= Rs 5000

17. **A certain sum, invested at 4% per annum compound interest, compounded half yearly, amounts to Rs. 7,803 at the end of one year. The sum is-**
**अर्द्ध वार्षिक रूप से नियोजित, कोई निश्चित धनराशि 4% वार्षिक चक्रवृद्धि ब्याज से 1 वर्ष के अंत में Rs. 7,803 हो जाती है। तो वह धनराशि है।**
**(a) Rs. 7,000 (b) Rs. 7,200 (c) Rs. 7,500 (d) Rs. 7,700**

P =

r = 4% → P.a. = 2% per/Half year → 1/50

t = 1 year = 2 Half year

A = 7803

| | | |
|---|---|---|
| 50 | : | 51 |
| 50 | : | 51 |
| P = 2500 | : | 2601 unit → 7803 |
| ×3 | | ×3 |

7500 ₹ Ans

18. **A certain sum invested at the rate of interest of 8% per annum become Rs. 6760 in the end of 1 year at compound interest half-yearly. Find the sum.**

8% प्रतिवर्ष की ब्याज दर पर निवेश की गई एक निश्चित राशि 1 वर्ष की समाप्ति पर अर्द्ध वार्षिक चक्रवृद्धि ब्याज दर से रु. 6760 बैठती है। राशि ज्ञात कीजिए।

(a) 6000 (b) 6520 (c) 6250 (d) 6500

$t = 1$ year $= 2$ Half year

$r = 8\%$ $= 4\%$ P.H.y $= 1/25$

| 25 | 26 |
|---|---|
| 25 | 26 |
| P = 625 | : 676 Unit $\xrightarrow{\times 10}$ 6760 |
| $\times 10$ | |

$P \Rightarrow 6250$ रु Ans