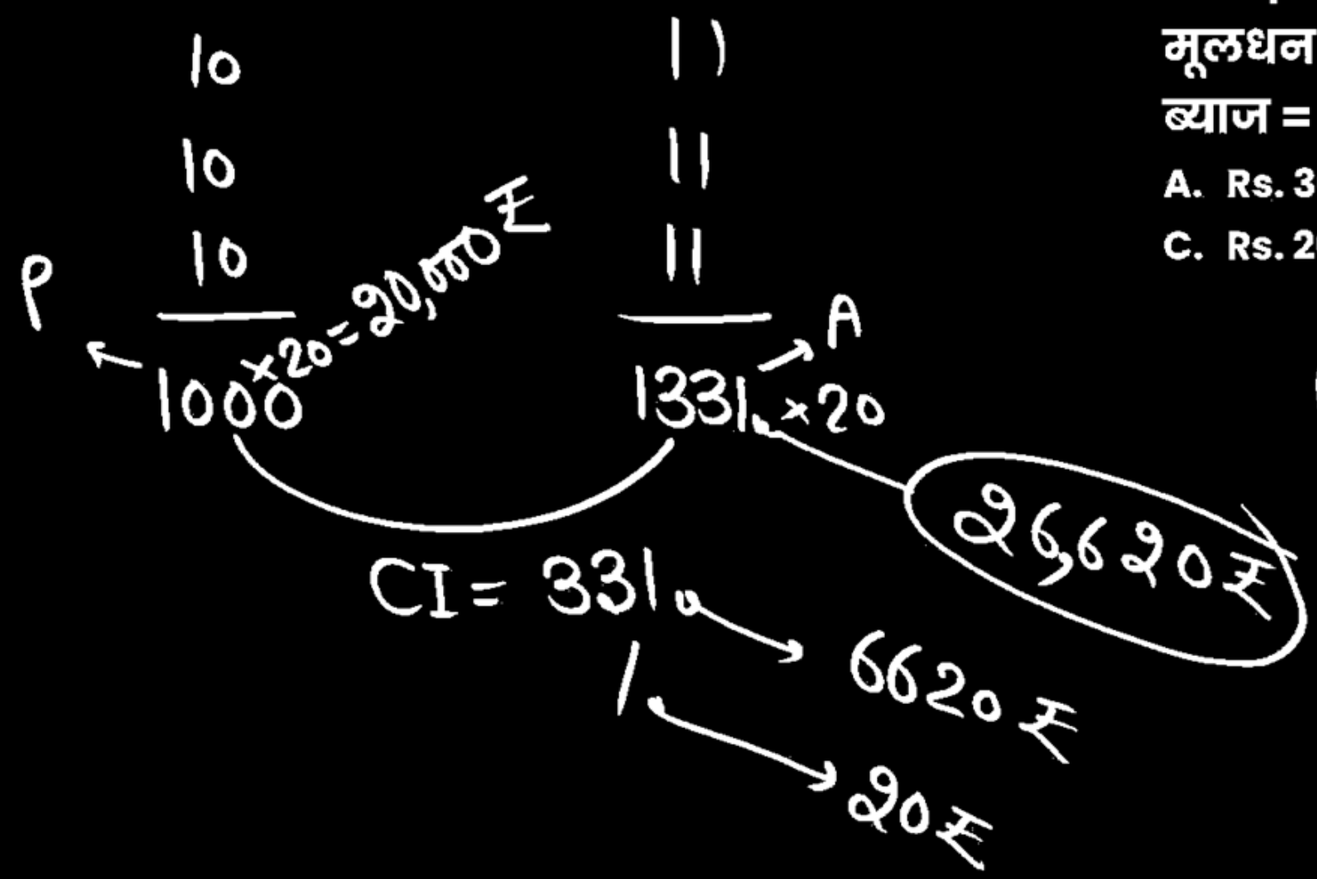
Time → 3 year

Type 02

$10\% = \frac{1}{10}$



1. Principal = ?, Time = 3 yr, Rate = 10%, compound interest = Rs. 6620
   मूलधन = ? समय = 3 वर्ष, दर = 10%, चक्रवृद्धि ब्याज = Rs. 6620
   A. Rs. 30000
   B. Rs. 25000
   C. Rs. 20000
   D. Rs. 18000

CI - SI = 31 ⟶

SI = 300 ⟶

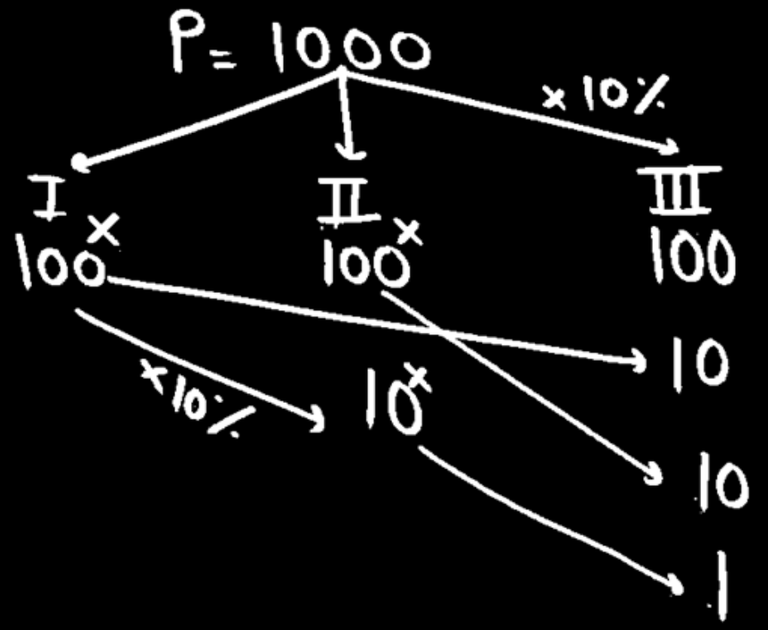
CI = 331 ⟶

3rd year का CI = 121 ⟶

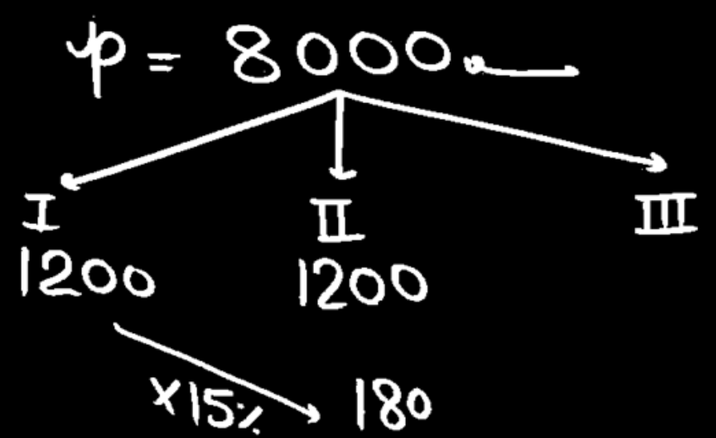
2nd year का CI = 110

1. Principal = ?, Time = 3 yr, Rate = 10%, compound interest = Rs. 6620
   मूलधन = ? समय = 3 वर्ष, दर = 10%, चक्रवृद्धि ब्याज = Rs. 6620

A. Rs. 30000
B. Rs. 25000
C. Rs. 20000
D. Rs. 18000



$r = 15\% = \frac{3}{(20)}$



$\frac{360}{540}$
$\frac{27}{\overline{567}}$

3rd year का CI =

2. Principal = ?, Time = 3 yr, Rate = 15%, (CI– SI) = Rs. 1701

मूलधन = ?, समय = 3 वर्ष, दर = 15%, (चक्रवृद्धि ब्याज – साधारण ब्याज) = Rs. 1701

(a) Rs. 24000 (b) Rs. 25000

(c) Rs. 30000 (d) Rs. 40000

$P = 8000 \xrightarrow{\times 3} ₹ = 24,000₹$

$SI = 3600 \rightarrow$

$CI = 4167 \rightarrow$

$CI - SI = 567 \rightarrow 1701₹$ 3₹

$\overline{567}$

$P = 8^3 = 512 \times \frac{1}{2} \Rightarrow 256$ ₹

CI - SI = 25 → 12.50 ₹

1 → $\frac{12.50}{25} = \frac{1}{2}$ ₹

3. **Principal = ?, Rate = $12\frac{1}{2}$%, Time = 3 yr. (CI – SI) = Rs. 12.50**

मूलधन = ?, दर = $12\frac{1}{2}$%, समय = 3 वर्ष, (चक्रवृद्धि ब्याज- साधारण ब्याज) = Rs. 12.50

A. Rs. 264
B. Rs. 260
C. Rs. 256
D. Rs. 270

3a+1

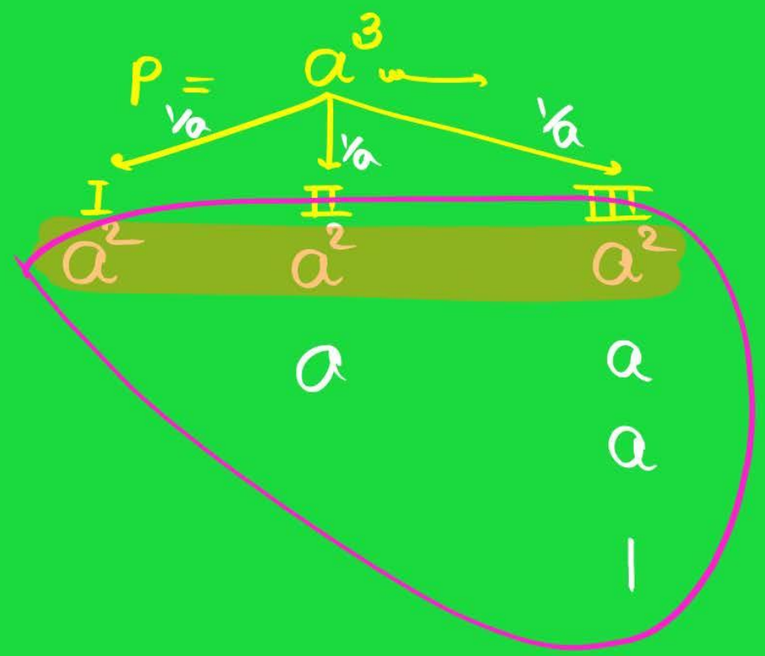
rate% = $\frac{1}{a}$

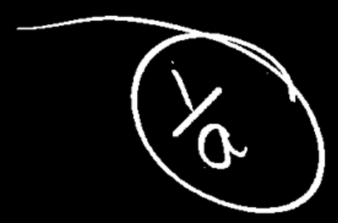
time = 3 years|साल

SI = $3a^2$

CI = $3a^2 + 3a + 1$

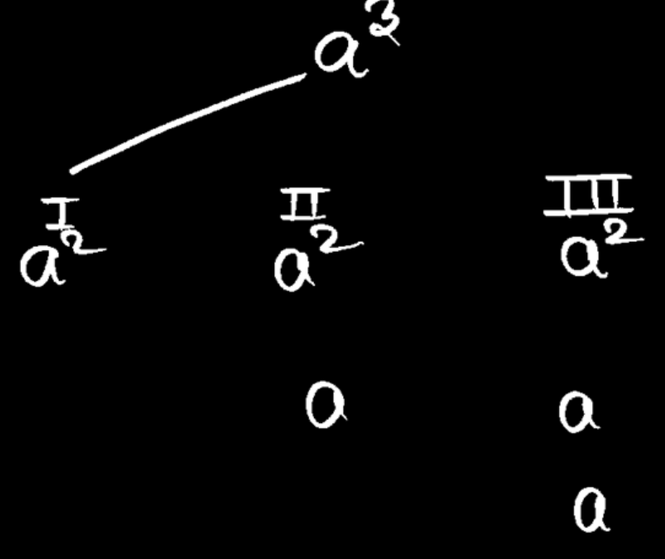
CI - SI = $3a + 1$





$$p = a^3$$

$$CI - SI = 3a + 1$$



$P = 216^{x 0.3} \Rightarrow 64.8$

$CI - SI = 19 \longrightarrow 5.70$

$\longrightarrow 0.3$ ₹

4. **Principal = ?, Rate = $16\frac{2}{3}$%, Time = 3 yr.**

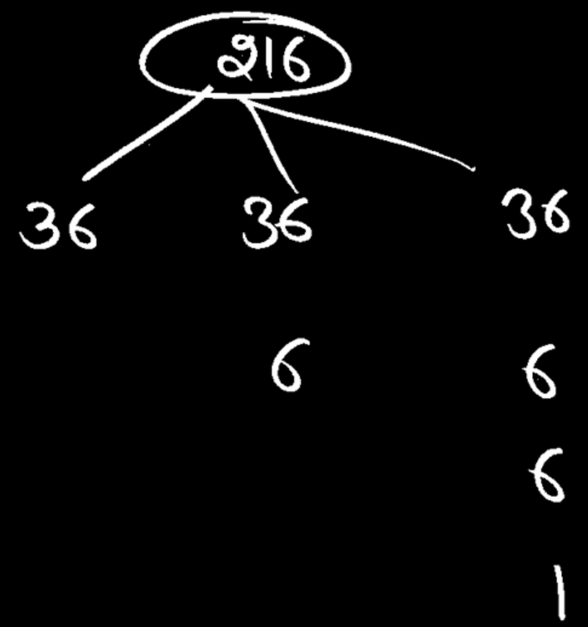
(CI – SI) = Rs. 5.70

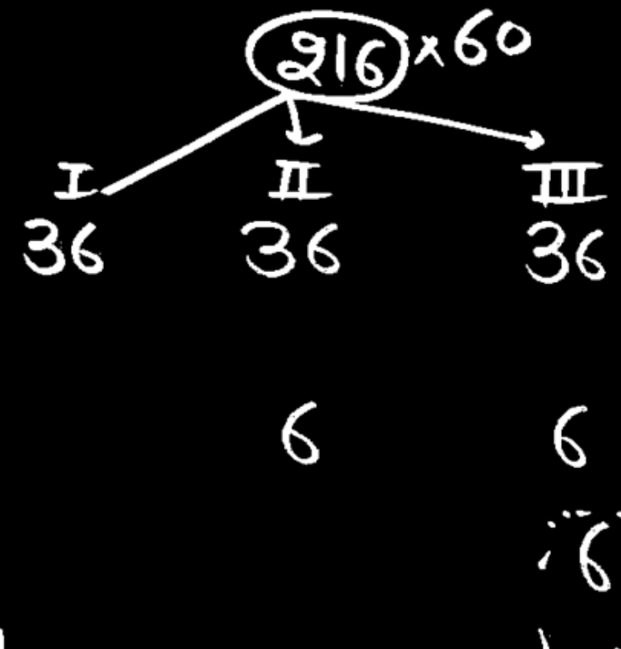
मूलधन = ?, दर = $16\frac{2}{3}$% $\Rightarrow \frac{1}{6}$, समय = 3 वर्ष,

(चक्रवृद्धि ब्याज - साधारण ब्याज) = Rs. 5.70

A. Rs. 648 **B. Rs. 600**

C. Rs. 548 **D. Rs. 560**

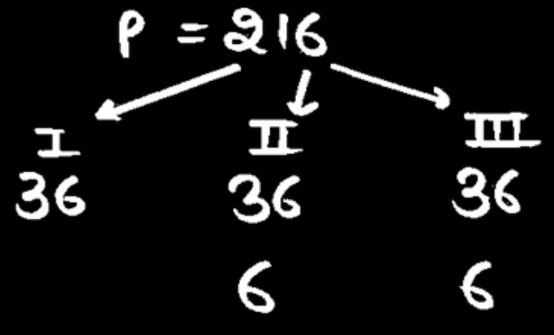

216
36
36
36
6
6
6

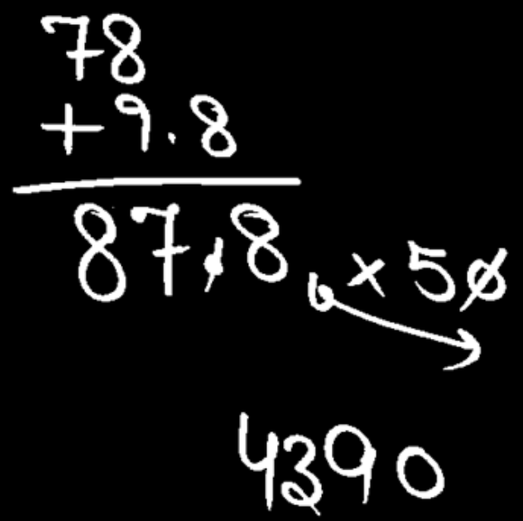


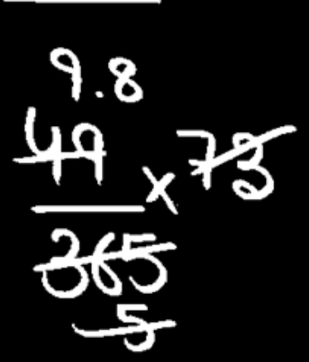
5. Principal = ?, Time = 3 yr, Rate = $16\frac{2}{3}\%$
   3rd yr. CI – 2nd year CI = Rs. 420
   मूलधन = ?, समय = 3 वर्ष, दर = $16\frac{2}{3}\%$, (तीसरे वर्ष का चक्रवृद्धि ब्याज - दूसरे वर्ष का चक्रवृद्धि ब्याज) = Rs. 420
   A. Rs. 10000 B. Rs. 12960
   C. Rs. 11000 D. Rs. 12000

3rd year का CI - 2nd year का CI =

41 − 42 ⇒ 7 $\xrightarrow{\times 60}$ 420 ₹





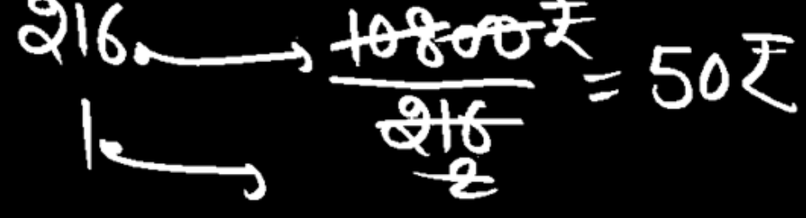


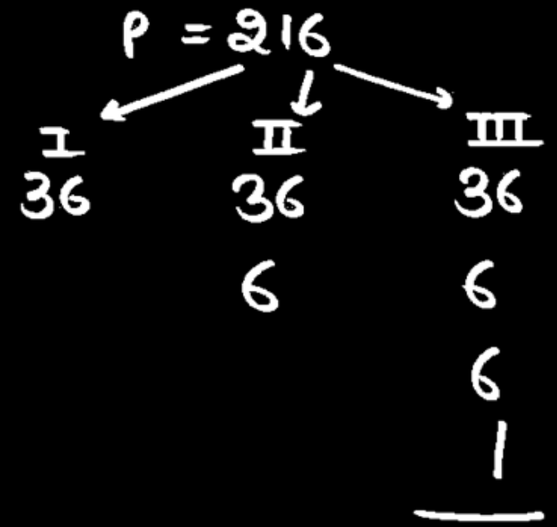
6. Principal = Rs. 10,800, Rate = $16\frac{2}{3}\%$, Time = 2 yr. 73 days, CI = ?

मूलधन = Rs. 10,800 दर = $16\frac{2}{3}\%$, समय = 2 वर्ष 73 दिन, चक्रवृद्धि ब्याज = ?

A. Rs. 4200 B. Rs. 4000

C. Rs. 4500 D. Rs. 4390





78
24.5

$\frac{49}{12} \times 3$

4

24.5

6. Principal = Rs. 10,800, Rate = $16\frac{2}{3}\%$, Time = 2 yr. 73 days, CI = ?

मूलधन = Rs. 10,800 दर = $16\frac{2}{3}\%$, समय = 2 वर्ष 73 दिन, चक्रवृद्धि ब्याज = ?

A. Rs. 4200
B. Rs. 4000
C. Rs. 4500
D. Rs. 4390

$r = 20\% = 10\%$ Per half year $= \frac{1}{10}$

$t = 1$ year 6 month $= 3$ Half year

10	11
10	11

P — 10 — 11 — A

1000 — 1331

$\times 20$

CI = 331 $\times 20$ = 6620₹

20,000₹

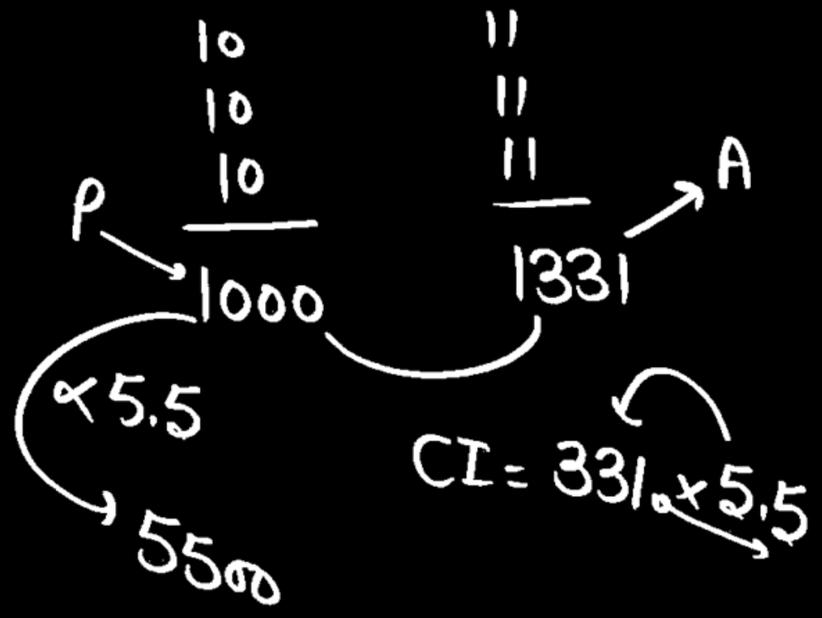
7. Principal = Rs. 20,000, Rate = 20%, Time = 1 yr. 6 month Calculate Compound Interest when rate is Compounded half yearly.
मूलधन = Rs. 20,000, दर = 20%, समय = 1 वर्ष 6 महीने, चक्रवृद्धि ब्याज ज्ञात करों अगर दर अर्धवार्षिक जाए।

A. Rs. 6870 B. Rs. 6520

C. Rs. 6620 D. Rs. 6600

$r = 15\%$ P.a. $= 10\%$ Per 8 month $= \frac{1}{10}$

$t = 2$ year $= 3$



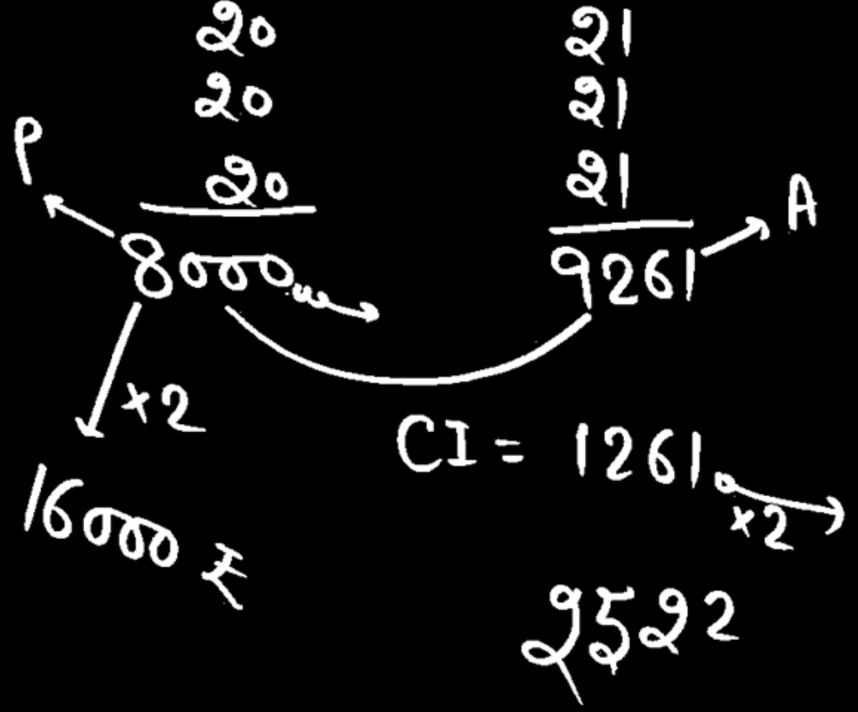
$$\begin{array}{r} 1655 \\ 165.5 \\ \hline 1820.5 \end{array}$$

8. **The compound interest on a sum of Rs 5,500 at 15% p.a. for 2 years, when the interest is compounded 8 monthly is:**
रुपये 5,500 की राशि पर वार्षिक 15% की दर से 2 वर्ष में प्राप्त चक्रवृद्धि ब्याज ज्ञात कीजिए, जब ब्याज की गणना हर 8 महीने पर चक्रवृद्धि आधार पर की जाती है।

A. Rs. 1,850
B. Rs. 1,880
C. Rs. 1,820.50
D. Rs. 1,773.75

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

$t = 9$ months $= 3$ Quarters



9. The compound interest on a sum of Rs. 16000 at 20% p.a. for 9 months, when the interest is compounded quarterly?

रुपये 16000 की राशि पर वार्षिक 20% की दर से 9 माह में प्राप्त चक्रवृद्धि ब्याज ज्ञात कीजिए, जब ब्याज की गणना त्रैमासिक आधार पर की जाती है।

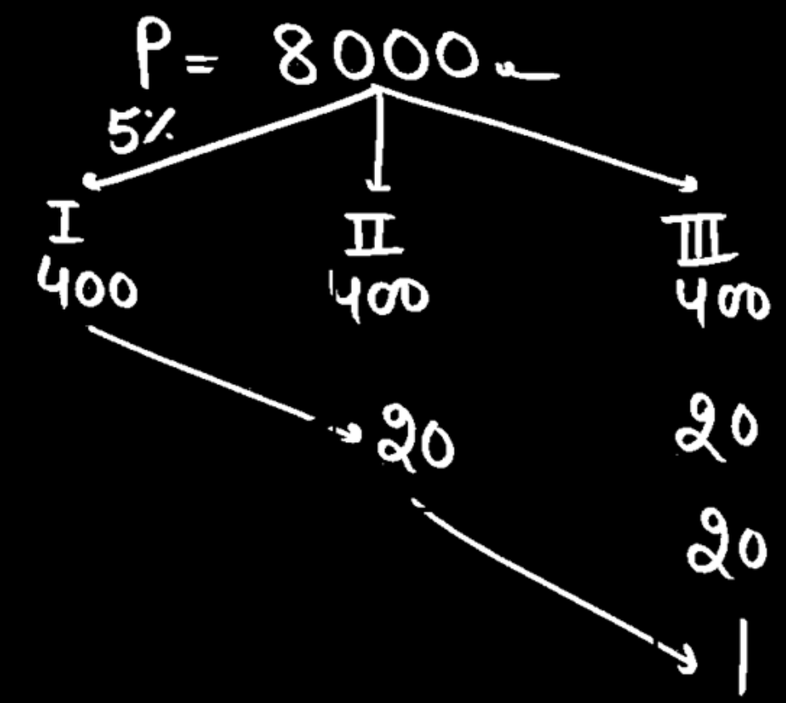
A. 2522
B. 2225
C. 2672
D. 2870

8000 ⟶ 16000 ₹

1 ⟶ $\frac{16000}{8000}$ = 2 ₹

$r = 20\%$ $= 5\%$ Per Quarter $= \frac{1}{(20)^3}$

$t = 9$ months $= 3$ Quarter



9. The compound interest on a sum of Rs. 16000 at 20% p.a. for 9 months, when the interest is compounded quarterly?

रुपये 16000 की राशि पर वार्षिक 20% की दर से 9 माह में प्राप्त चक्रवृद्धि ब्याज ज्ञात कीजिए, जब ब्याज की गणना त्रैमासिक आधार पर की जाती है।

A. 2522
B. 2225
C. 2672
D. 2870

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

$t = 1$ year $= 4$ Quarters

$3 + 3 + 3 + 3$

20% Per annum

5

$\frac{20}{12} \times 3$

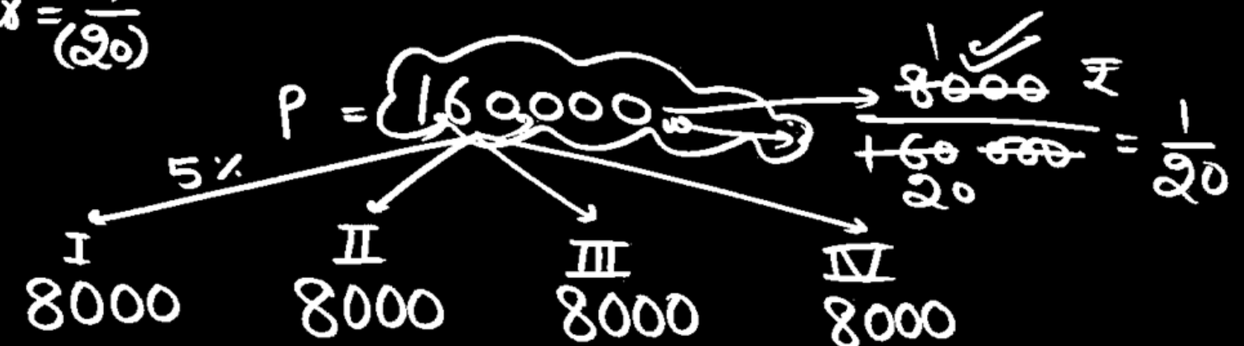
10. **Principal = Rs. 8000, Rate = 20%, Time = 1 yr. Find (CI – SI) if rate is Compounded quarterly.**
मूलधन = Rs. 8000, दर = 20% समय = 1 वर्ष तो (चक्रवृद्धि ब्याज – साधारण ब्याज) ज्ञात करों अगर दर त्रैमासिक हो तो।

✓ **A. Rs. 124.05** **B. Rs. 138.40**

C. Rs. 125.04 **D. Rs. 128**

$r = 20\% = 5\%$ Per Quarter $= \frac{1}{(20)}$

$t = 1$ year $= 4$ Quarters



$$\frac{1240.5}{} \times \frac{1}{20}$$

2×10

124.05 ₹

	400	400	400
	400	400	400
	20	20	20
			20
			1

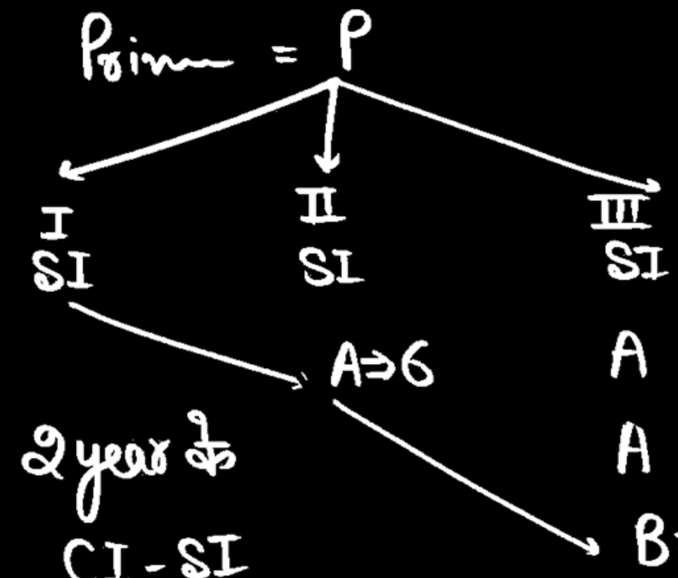
11. The ratio of difference between CI and SI for 3 years to the difference of CI and SI for 2 years is 19 : 6 find the rate of interest.
3 वर्ष चक्रवद्धि ब्याज और साधारण ब्याज का अंतर और 2 वर्ष के चक्रवृद्धि ब्याज व साधारण ब्याज के अंतर का अनुपात 19 : 6 है। दर ज्ञात करों?

A. 20% B. 50% C. $16\frac{2}{3}\%$ D. 70%

3 year के CI - SI : 2 year के CI - SI

19 : 6

$r\% = \frac{1}{a}$



3 year $\frac{1}{2}$: 2 year $\frac{1}{2}$

CI - SI CI - SI

3A + B : A

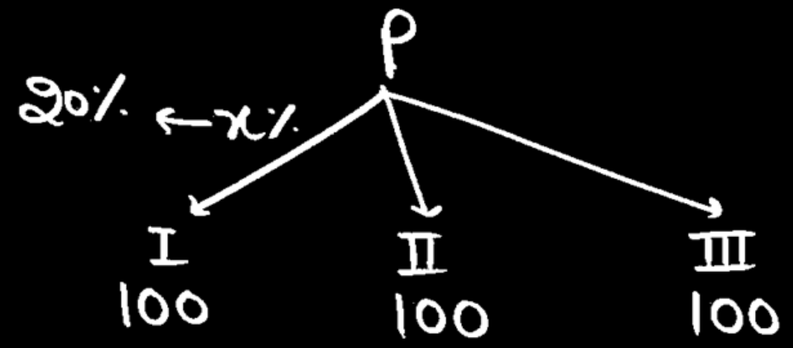
18 + 1

19 : 6

$r = \frac{1}{6} \times 100 = 16\frac{2}{3}\%$

12. Ratio of 3 years of CI and SI of one year on a certain sum of money is 3.64 : 1 find rate percent.
3 वर्ष के चक्रवृद्धि ब्याज व 1 वर्ष के साधारण ब्याज का अनुपात 3.64 : 1 है। दर ज्ञात करों।
A. 20% B. 50% C. 30% D. 70%

3 year का CI : 1 year का SI
CI → 364 : 100
SI → 300
CI-SI → 64

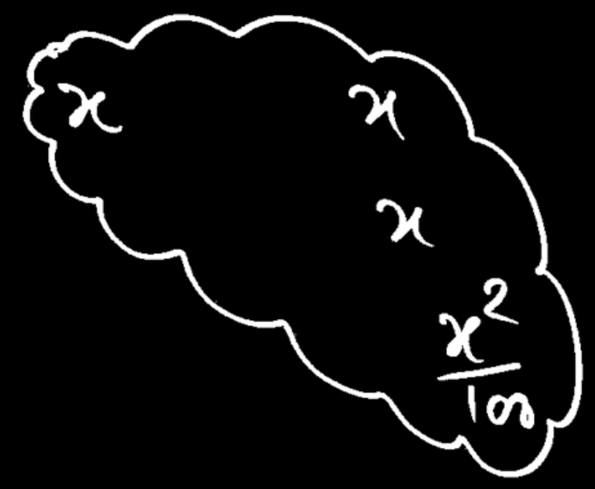


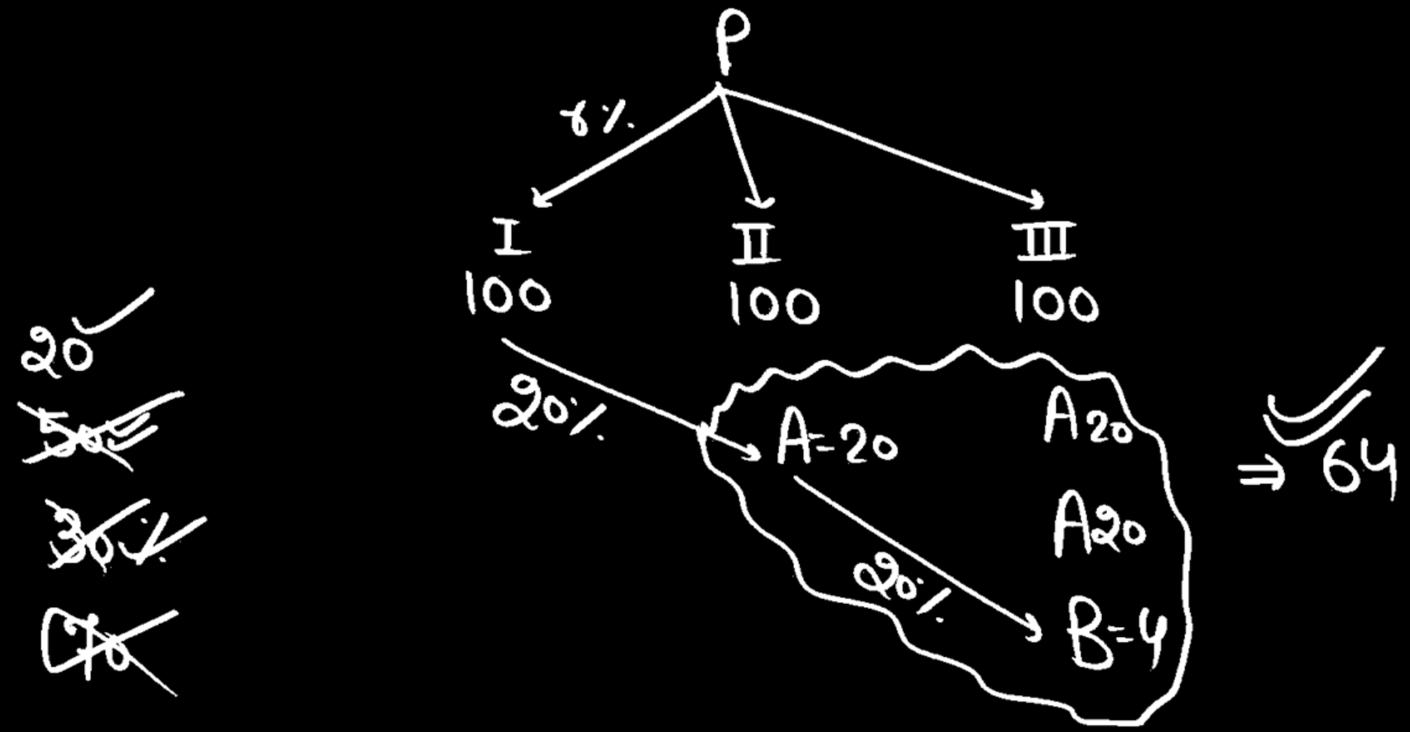
$$3x + \frac{x^2}{100} = 64$$

$$300x + x^2 = 6400$$

$$x(300 + x) = 6400$$

$$20^{x} \times 320$$

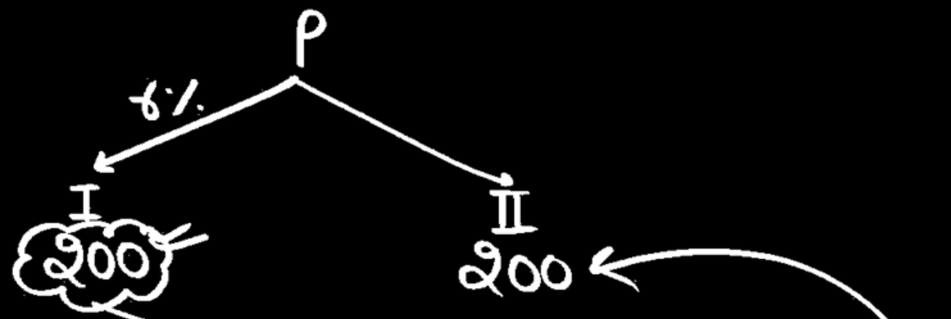



P
8%
I
100
II
100
III
100
20%
A=20
A20
A20
20%
B=4
20
⇒ 64

t = 2 year

12. The simple interest and compound interest on a certain sum of money is Rs. 400 & Rs. 410 respectively find principal and rate of interest ? (time = 2 years)
किसी धन पर साधारण ब्याज व चक्रवृद्धि ब्याज क्रमशः Rs. 400 व 410 है। मूलधन व दर ज्ञात करो अगर समय 2 वर्ष हो?

A. 3500 B. 4500 C. 4000 D. 2500



$P \times \frac{5}{100} = \cancel{200}^{40}$

$P = 4000$

$\frac{\cancel{10}}{\cancel{200}} \times \cancel{100}$

$\frac{20 \times 200}{P}$

5% Per annum

$$r = \sqrt{\frac{D}{P}} \times 100$$

$$r = \sqrt{\frac{72^{36}}{5000_{2500}}} \times 100$$

$$r = \frac{6}{50} \times 100^{2} = 12\%$$

14. If the difference between CI and SI on a certain sum of money of Rs. 5000 for 2 years is Rs. 72. Find rate of interest?

Rs. 5000 के धन का 2 वर्ष का साधारण ब्याज और चक्रवृद्धि का अंतर Rs. 72 है दर ज्ञात करो।

A. 25% B. 15% C. 12% D. 10%

Principal = P

t = 2 year

rate = r %

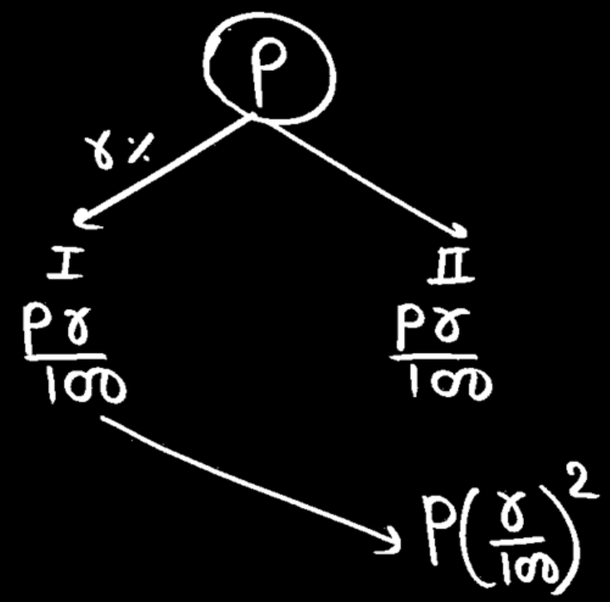
CI - SI = D

$$D = P\left(\frac{r}{100}\right)^2$$

$$\frac{D}{P} = \left(\frac{r}{100}\right)^2$$

$$\sqrt{\frac{D}{P}} = \frac{r}{100}$$

$$100 \times \sqrt{\frac{D}{P}} = r$$



for 2 years

$CI - SI = D$

$$r = \sqrt{\frac{D}{P}} \times 100$$

$$\frac{CI-SI}{P} = \frac{3a+1}{a^3}$$

$$\frac{\cancel{1500}\ 25}{\cancel{30720}\ 512} = \frac{3a+1}{a^3}$$

$$\frac{25}{512} = \frac{3a+1}{a^3} \quad = 25$$

$a^3 \to 8$

15. At what is rate percent the difference of CI and SI on a certain sum of money of Rs. 30720 in 3 years is Rs. 1500.
Rs. 30720 के धन का 3 वर्ष का साधारण ब्याज और चक्रवृद्धि ब्याज का अंतर Rs. 1500 है। दर ज्ञात करो?

✓ A. $12\frac{1}{2}\%$ B. $15\frac{2}{3}\%$ C. $18\frac{2}{3}\%$ D. $16\frac{2}{3}\%$

$\frac{1}{8}$

$$6\% = \frac{1}{a} = \frac{1}{8}$$

$$\frac{CI - SI}{P} = \frac{3a+1}{a^3}$$

a^3

a^2 a^2 a^2

a a

a

1

3 year का
CI − SI

$$3P\left(\frac{r}{100}\right)^2 + P\left(\frac{r}{100}\right)^3 = D$$

$$\Rightarrow P\left(\frac{r}{100}\right)^2\left[3 + \frac{r}{100}\right] = D$$