

SOLUTION

1. (d) Time (समय) = 2 years (वर्ष), Rate (दर) = 4%

Compound Interest (चक्रवृद्धि ब्याज) = Rs. 102

NOTE:

$$C I \text{ for } 2 \text{ years} = R + R + \frac{R \times R}{100}$$

Where (जहाँ) R Rate of Interest (ब्याज की दर)

Combined rate% of CI for 2 years
(2 वर्ष के लिए % चक्रवृद्धि ब्याज)

$$= 4 + 4 + \frac{4 \times 4}{100} = 8.161 \%$$

SI for two years

(2 वर्ष के लिए % चक्रवृद्धि ब्याज) = $2 \times 4 = 8 \%$

According to the question (प्रश्नानुसार),

S I for 2 years (2 वर्ष का साधारण ब्याज)

$$= \frac{102}{8.16} \times 8 = \text{Rs } 100$$

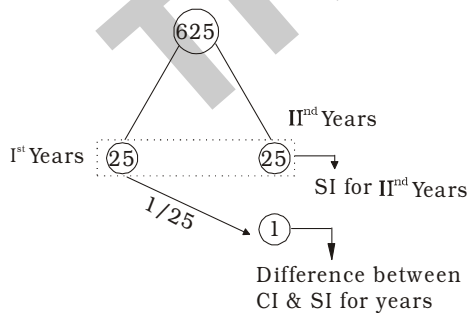
Hence, required simple interest

(अभीष्ट साधारण ब्याज) = **Rs. 100**

Alternate/वैकल्पिक विधि :

$$\text{Rate (दर)} = 4\% = \frac{1}{25}$$

Principal (मूलधन) = $(25)^2 = 625 \text{ units}$



2. (d) Time (समय) = 3 years (समय),
Rate (दर) % = 10%
CI for 2 years (2 वर्ष चक्रवृद्धि ब्याज)

$$= 10 + 10 + \frac{10 \times 10}{100} = 21\%$$

CI for 3 years (3 वर्ष चक्रवृद्धि ब्याज)

$$= 10 + 21 + \frac{21 \times 10}{100} = 33.1\%$$

SI for 3 years (3 वर्ष का साधारण ब्याज)
 $= 3 \times 10 = 30\%$

Difference in CI and SI (चक्रवृद्धि ब्याज तथा साधारण ब्याज का अंतर) = $(33.1 - 30)\% = 3.1\%$
according to the question (प्रश्नानुसार), 3.1% of sum = Rs. 31

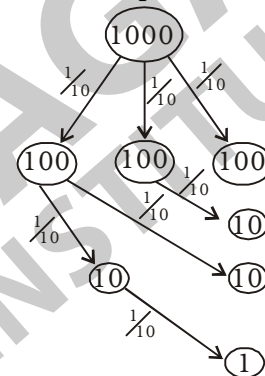
$$1\% \text{ of sum} = \text{Rs. } \frac{31}{3.1}$$

$$\text{Sum} = \text{Rs. } \frac{31}{3.1} \times 100 = \text{Rs. } 1000$$

Alternate/वैकल्पिक विधि :

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

Let Principal = $(10)^3 = 1000 \text{ units}$



SI for 3 years (3 वर्ष का साधारण ब्याज)
 $= 100 \times 3 = 300 \text{ units}$

CI for 3 years (3 वर्ष का चक्रवृद्धि ब्याज)

$= (100 \times 3 \times 10 \times 3 + 1) = 331 \text{ units}$

Difference (अंतर) = $(331 - 300) = 31 \text{ units}$

According to the question (प्रश्नानुसार),

31 units = Rs. 1

1000 units = Rs. 1 \times 1000 = Rs. 1000

Hence, Required sum (अभीष्ट योग) = Rs. 1000

3. (a) **NOTE:** In such type of questions to save your valuable time follow the given below method.

नोट: इस प्रकार के प्रश्नों में अपने बहुमूल्य समय के बचत के लिए आप नीचे दी गयी विधि का प्रयोग कर सकते हैं।

Principal	Amount	Time (years)
1	$(2)^1$	15
	↓	↓ $\times 3$
1	$(3)^3$	45 years

Hence, required time (अभीष्ट समय)

= 45 years

Alternate/वैकल्पिक विधि :

(I) Let principal (मूलधन) = P ,

Amount (मिश्रधन) = 2P

Case (I): By using formula,

$$2P = P \left(1 + \frac{R}{100}\right)^{15} \dots\dots\dots(i)$$

Case (II): let after n years it will become 8 times (माना कि n वर्ष के बाद यह 8 गुना जायेगा)

$$\left(1 + \frac{r}{100}\right)^n \dots\dots\dots(ii)$$

From, equation (i)

$$2 = \left(1 + \frac{R}{100}\right)^{15}$$

Cubing both sides (दोनों पक्षों का घन करने पर)

$$(2)^3 = \left(1 + \frac{R}{100}\right)^{45} \dots\dots\dots(iii)$$

By using equation (ii) & (iii)

∴ Here n = 45 years

Alternate/वैकल्पिक विधि:

15 yrs 15 yrs 15 yrs
 $P \rightarrow 2 \quad P \rightarrow 4 \quad P \rightarrow 8P$

NOTE : Amount will be same in the same period of time (बराबर समय में रशि भी बराबर होगी).

4. (d)

Let the principal

(माना कि मूलधन) = Rs. P ,

Time (समय) = 2 years

Amount (मिश्रधन) = Rs. 2.25 P ,

Let Rate (माना कि दर) % = R%

By using formula,

$$2.25P = P \left(1 + \frac{R}{100}\right)^2$$

$$\frac{225}{100} = \left(1 + \frac{R}{100}\right)^2$$

$$\left(\frac{15}{10}\right)^2 = \left(1 + \frac{R}{100}\right)$$

$$\frac{R}{100} = \frac{15}{10} = 1$$

$$\Rightarrow \frac{R}{100} = \frac{5}{10}$$

Akterbate/वैकल्पिक विधि :

Note: In such type of questions to save your valuable time follow the given below method.

	Amount	:	Principal
II nd Year	→ $\sqrt{225}$		$\sqrt{100}$
Ist Year	→ 15	:	10
	+5 units		

$$\text{Rate \%} = \frac{5}{10} \times 100 = 50 \%$$

5. (b)

Note: For detailed solution of such type of question, check the solution of previous questions.

नोट: इस तरह के प्रश्नों का विस्तृत हल देखने के लिए पिछले प्रश्नों के हल को देखें।

	Amount	:	Principal
3 rd Year	→ $\sqrt[3]{1000}$		$\sqrt[3]{1331}$
Ist Year	→ 10	:	11
	+1 units		

$$\text{Rate \%} = \frac{1}{10} \times 100 = 10\%$$

6. (b)

Principal = Rs. 10,000,

Time = 2 years

Rate % = 4%

When the interest is compounded half-yearly, time (जब ब्याज अर्धवार्षिक संयोजित होता है) = $2 \times 2 = 4$

$$\text{Rate (दर)} = \frac{4}{2} \% = 2\%$$

By using formula,

$$\text{Amount (मिश्रधन)} = 10000 \times \left(1 + \frac{2}{100}\right)^4$$

$$\text{Amount} = 10000 \times \frac{51}{50} \times \frac{51}{50} \times \frac{51}{50} \times \frac{51}{50}$$

Amount = Rs. 108224.32

Compound interest = Amount - Principal

CI = Rs. (108224.32 - 10000) = **824.32**

Alternate/वैकल्पिक विधि:

CI for 2 years (2 वर्ष का चक्रवृद्धि ब्याज)

$$= 2 + 2 + \frac{2 \times 2}{100} = 4.04\%$$

CI for 4 years (4 वर्ष का चक्रवृद्धि ब्याज)

$$= 4.04 + 4.04 + \frac{4.04 \times 4.04}{100}$$

$$= 8.08 + 0.1632 = 824.32\%$$

According to the question (प्रश्नानुसार),

$$CI = 10000 \times \frac{8.2432}{100} = \mathbf{824.32}$$

7. (c) Principal = Rs. 2,000,
Amount = Rs. 2420
Rate = 10%
by using formula,

$$2420 = 2000 \left(1 + \frac{10}{100}\right)^n$$

$$\frac{2420}{2000} = \left(1 + \frac{10}{100}\right)^n$$

$$\frac{121}{100} = \left(\frac{11}{10}\right)^n$$

$$\left(\frac{11}{10}\right)^2 = \left(\frac{11}{10}\right)^n$$

$$= n = 2 \text{ years}$$

Hence, Required time (अभीष्ट समय) = 2 years

Alternate/वैकल्पिक विधि:

Note: In such type of questions to save your valuable time follow the given below method.

नोट: इस प्रकार के प्रश्नों में अपने बहुमूल्य समय के बचत के लिए आप नीचे दी गयी विधि का प्रयोग कर सकते हैं।

Principal	:	Amount
2000	:	2420
100	:	121

$$\text{Rate} = 10\% = \frac{10}{100}$$

	Principal	Amount
I st Year	→ 10	11
II nd Year	→ 10	11
	100	121

Note: Now after 2nd year both the principal and amount will be in the same ratio.

नोट: अब 2 वर्ष के बाद मूलधन तथा मिश्रधन बराबर अनुपात में होगा।

Hence, required time (अभीष्ट समय) (t) = 2 years

8. (a) **Case (I):** SI for 1 years (1 वर्ष का साधारण ब्याज) = 6 + 6 = 12%
Case (II): CI Is compounded half yearly

(चक्रवृद्धि ब्याज अर्धवार्षिक संयोजित होता है).

$$\text{Rate}\% = \frac{12}{2} = 6\%$$

$$t = 1 \times 2 = 2$$

Effective Rate% for 2 half years (2.5 वर्षों

$$\text{के लिए प्रभावी दर}) = 6 + 6 + \frac{6 \times 6}{100} = 12.36\%$$

According to the question (प्रश्नानुसार),
(12.36 - 12%) of sum = Rs. 36

$$1\% \text{ of sum} = \frac{36}{0.36}$$

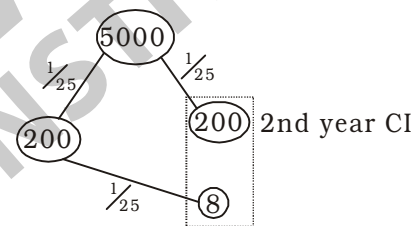
$$100\% \text{ sum} = \frac{36}{0.36} \times 100 = \mathbf{Rs. 10,000}$$

9. (a) Principal (P) = Rs. 5,000,

$$t = 1\frac{1}{2} \text{ years} = \frac{3}{2} \text{ years,}$$

$$\text{Rate}\% - 4\% = \frac{1}{25}$$

Case (I): When interest is compounded annually (जब ब्याज वार्षिक संयोजित होता है)



2nd year CI (2 वर्ष का चक्रवृद्धि ब्याज)

$$= (200 + 8) = \mathbf{Rs. 208}$$

6 months CI in 2nd year (6 महीने का चक्रवृद्धि ब्याज)

$$= \frac{208}{12} \times 6 = \mathbf{Rs. 104}$$

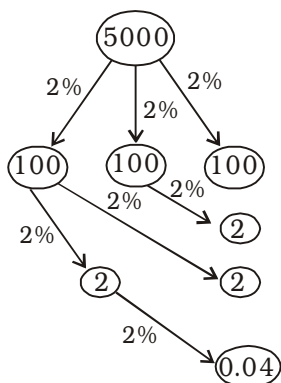
Total interest (कुल ब्याज) = Rs (200 + 104) = Rs. 304

Case (II): When interest is compounded half yearly

(जब ब्याज अर्धवार्षिक संयोजित होता है),

$$\text{Rate}\% = \frac{4}{2} = 2\%$$

$$\text{Time} = \frac{3}{2} \times 2 = 3 \text{ years}$$



Tota compound interest
 $= (100 \times 3 + 6 + 0.04)$
 $= \text{Rs. } 306.04$
 $= \text{Rs. } 306.4$
Difference = Rs. (306.04 - 304)
 $= \text{Rs. } 2.04$

Alternate/वैकल्पिक विधि:

Case (I): When interest is calculated yearly (जब ब्याज वार्षिक संयोजित होता है).

Effective Rate (प्रभावी दर) % $= 4 + 2 + \frac{4 \times 2}{100} = 6.08\%$

Case (II): When interest is calculated half-yearly (जब ब्याज अर्धवार्षिक संयोजित होता है)

Rate (दर) % $= \frac{4}{2} = 2\%$

Time $= \frac{3}{2} \times 2 = 3 \text{ years}$

Effective Rate (प्रभावी दर) % $= 6.1208\%$

Difference in Rates (दरों का अंतर) $= (6.1208 - 6.08)\% = 0.0408\%$

Required difference (अभीष्ट अंतर)

$= \frac{5000 \times 0.0408}{100} = 2.06$

10. (a) Principal = Rs. 2550,

Rate% $= 4\% = \frac{26 \rightarrow \text{Installment}}{25 \rightarrow \text{Principal}}$

Time = 2 years

Principal : Installment(I)

Ist year 25 $\times 26$: 26

IInd year 625 : 676

Note: Installment will be same in both cases.

नोट: दोनों स्थितियों में किस्त बराबर होगी।

650 676

625 676

According to the question (प्रश्नानुसार),
1275 units = Rs. 2550

1 units = Rs. $\frac{2550}{1275}$

676 units = Rs. $\frac{2550}{1275} \times 676$

= Rs. 1352

11. (c) SI for = 2 years (2 वर्ष का साधारण ब्याज)
 $= 5 + 5 = 10\%$

CI for 2 years (2 वर्ष का चक्रवृद्धि ब्याज)

$= 5 + 5 + \frac{5 \times 5}{100} = 10.25\%$

Difference (अंतर) $= (10.25 - 10)\%$

0.25% of sum = Rs. 15

Sum $= \frac{15}{0.25} \times 100 = \frac{15 \times 10000}{25}$

Sum = Rs. 6000

Alternate/वैकल्पिक विधि :

Note: In such type of questions always remember. The difference between CI and SI for 2 years

अंतर $= \frac{r^2}{100} \% \text{ होगा।}$

Difference $= \frac{(5)^2}{100} = 0.25\%$

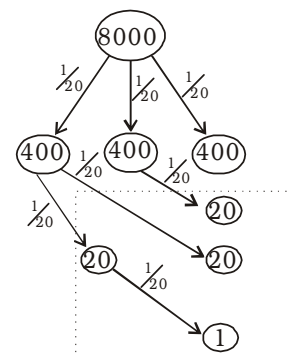
Hence Required sum $= \frac{15}{0.25} \times 100$
 $= \text{Rs. } 6000$

12. (d) $5\% = \frac{1}{20}$

Let sum $= (20)^3 = 8000 \text{ units}$

Note: In this question time is 3 years hence so for making calculation easier we assumed sum 8000 units.

नोट: इस प्रश्न में चूँकि समय 3 वर्ष है इसलिए हमने अपनी गणना को आसान बनाने के लिए योग माना है।



→ Difference in CI and SI for 3 year

According to the question (प्रश्नासार),
61 units = Rs. 36.60

$$8000 \text{ units} = \text{Rs. } \frac{36.60 \times 8000}{61}$$

Sum = Rs. 4800

Hence, Required sum = Rs. 4800

Alternate / वैकल्पिक विधि:

Note: In such type of question to save your valuable time follow the given below method.

नोट: इस प्रकार के प्रश्नों में अपने बहुमूल्य समय के बचत के लिए आप नीचे दी गयी विधि का प्रयोग कर सकते हैं।

Rate % = 5%

Effective Rate of CI for 3 years (3 वर्ष के लिए चक्रवृद्धि ब्याज की प्रभावी दर) = 15.7625%

Effective Rate of SI for 3 years (3 वर्ष के लिए साधारण ब्याज प्रभावी दर) = $5 \times 3 = 15\%$

According to the question (प्रश्नानुसार),

(15.7625 - 15)% of sum = Rs. 36.60

0.7625% of sum = Rs. 36.6.

$$\text{Sum} = \frac{36.60}{0.7625} \times 100 = \text{Rs. 4800}$$

- 13. (b)** Let Principal = P,
Rate = R%,
 $t = 4$ years
 \therefore Amount = 2P,

Case (I): $2P = P \left(1 + \frac{R}{100}\right)^4$

$$2 = \left(1 + \frac{R}{100}\right)^4 \dots\dots\dots (i)$$

Case (II): Let after t years it will be 8 times (माना कि t वर्ष के बाद यह 8 गुना हो जायेगा)

$$8P = P \left(1 + \frac{R}{100}\right)^t$$

$$(2)^3 = \left(1 + \frac{R}{100}\right)^t \dots\dots\dots (ii)$$

By using equation (i) & equation (ii)

$$\left(1 + \frac{R}{100}\right)^{12} = \left(1 + \frac{R}{100}\right)^t$$

By comparing both sides (दोनों पक्षों की तुलना करने पर),

$t = 12$ years

Alternate / वैकल्पिक विधि:

Note (I): In such type of questions to

save your valuable time follow the given below method.

नोट: इस प्रकार के प्रश्नों में अपने बहुमूल्य समय के बचत के लिए आप नीचे दी गयी विधि का प्रयोग कर सकते हैं।

Principal	Amount	Time (years)
1	2^1	4
	\downarrow	$\times 3$
1	$8 = (2^3)$	12 years

Alternate (II)

4 yrs	4 yrs	4 yrs
$P \rightarrow 2$	$P \rightarrow 4$	$P \rightarrow 8P$
$4 \times 3 = 12$ years		

- 14. (b)** **Note:** For detailed follow the previous question solution.

नोट: विस्तृत हल के लिए पिछले हलों को देखें।

Principal	Amount	Time (years)
1	2^1	10
	\downarrow	$\times 2$
1	$2^2 = 4$	20 years

Alternate:

10 yrs	10 yrs
$P \rightarrow 2$	$P \rightarrow 4P$
time = $2 \times 10 = 20$ years	
Hence, Principal amount will be four time it self in 20 years (इस प्रकार मूल्य न 20 वर्ष में 4 गुना हो जाएगा)	

15. (c)

Principal	Amount	Time (years)
1	2	6
	\downarrow	$\times 3$
	$2^3 = 8$	18 years

16. (a)

Amount (A_1)	Amount (A_2)
2400	2520
$+120$	

$$\text{Required Rate\%} = \frac{120}{2400} \times 100 = 5\%$$

- 17. (c)** Amount (A_1) = Rs. 4500,
 $t_1 = 2$ years
Amount (A_2) = Rs. 6750,
 $t_2 = 4$ years
Let the Rate% = R%
Principal = Rs. P
According to the question,

Note : Always remember for first years CI and SI will be same.

Note: For detailed solution check earlier questions solution of same type.

नोट: विस्तृत हल के लिए पहले के प्रश्नों के हल को देखें।

$$= 4 + 4 + \frac{4 \times 4}{100} = 8.16\%$$

Required difference = $(8.16 - 8)\% = 0.16\%$

Alternate/वैकल्पिक विधि:

$$CI - SI = P \left(\frac{R}{100} \right)^2$$

= Rs. 4

Time = 2 years

$$= 10 + 10 + \frac{10 \times 10}{100} = 21\%$$
$$\text{Difference in Rate\%} = (21 - 20) = 1\%$$
$$1\% \text{ of sum} = \text{Rs. } 65$$

25. (c) Required difference = $\frac{R^2}{100}\%$

According to the question,

$$\text{Sum} = \frac{1}{0.16} \times 100 = \text{Rs. } 625$$

Amount (A_1) Amount (A_2) Amount (A_2)

P 650 676

$\times \frac{26}{26}$ $\times \frac{26}{26}$

1st years 2 years

$$P \times \frac{26}{25} = 650$$

Hence, required principal = **Rs. 625**

Amount = Rs. 1331

Let time = n year

By using formula,

$$1313 = 1000 \left(1 + \frac{10}{100}\right)^n$$

$$\left(\frac{11}{10}\right)^3 = \left(\frac{11}{10}\right)^n$$

Hence, Required time = 3 years

$$\text{Rate\%} = 10\% = \frac{11 \rightarrow A}{10 \rightarrow P}$$

Total time = $(1 + 2) = 3$ years

Time = 2 years

Hence Required principal = Rs. 250

- 29. (c)** Principal = Rs. 2304,
Amount = Rs. 2500
Time = 2 years,
Let Rate% = R%
By using formula,

$$2500 = 2304 \left(1 + \frac{R}{100}\right)^2$$

$$\frac{2500}{2304} = \left(1 + \frac{R}{100}\right)^2$$

$$\frac{625}{576} = \left(1 + \frac{R}{100}\right)^2$$

$$\left(\frac{25}{24}\right)^2 = \left(1 + \frac{R}{100}\right)^2$$

By taking square root of both sides,

$$\frac{25}{24} = 1 + \frac{R}{100}$$

$$\frac{R}{100} = \frac{25}{24} - 1$$

$$\Rightarrow R = \frac{100}{24} = \frac{25}{6} \%$$

$$\text{Rate} = 4\frac{1}{6} \%$$

Alternate/वैकल्पिक विधि:

	Amount	:	Principal
	2304	:	2500
For 2nd year	$\sqrt[2]{576}$:	$\sqrt[2]{625}$
for 1st Year	24	:	25
		:	+1

$$\begin{aligned} \text{Required Rate\%} &= \frac{1}{24} \times 100 \\ &= \frac{25}{6} = 4\frac{1}{6} \% \end{aligned}$$

- 30. (b)** Rate% = $12\frac{1}{2} \%$ $\frac{1}{8} = \frac{9}{8} \rightarrow \text{Amt.}$
 $\frac{1}{8} = \frac{9}{8} \rightarrow \text{Pr i.}$

Principal	Amount
8	9
8	9
64	81
+17 units	

According to the question,
17 units = Rs. 510
64 units = Rs. 30×64 = Rs. 1920

Hence principal = Rs. 1920
SI for 2 years (2 वर्ष का साधारण ब्याज)
 $= 12\frac{1}{2} \times 2 = 25\%$

$$\text{Required SI} = \frac{1920 \times 25}{100} = \text{Rs. 480}$$

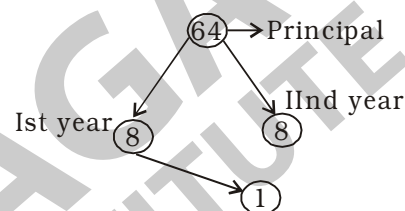
hence, Required SI = Rs. 480

Alternate/वैकल्पिक विधि:

Note: In such type of question to save your valuable time follow the given below method.

नोट: इस प्रकार के प्रश्नों में अपने बहुमूल्य समय के बचत के लिए आप नीचे दी गयी विधि का प्रयोग कर सकते हैं।

$$\text{Let principal} = (8)^2 = 64 \text{ units}$$



$$\text{CI for 2 years} = (8+8+1) = 17 \text{ units}$$

$$\text{SI for 2 years} = (8+8) = 16 \text{ units}$$

According to the question,
17 units = Rs. 510

$$1 \text{ unit} = \text{Rs. } \frac{510}{17} = \text{Rs. 30}$$

$$16 \text{ units} = \text{Rs. } 30 \times 16 = \text{Rs. 480}$$

- 31. (c)** Difference In CI and SI for 2 years (2 वर्षों का चक्रवृद्धि ब्याज तथा साधारण ब्याज का अंतर)
 $= (40.80 - 40) = \text{Rs. 0.80}$

$$\text{SI for first year} = \frac{40}{2} = \text{Rs. 20}$$

$$\text{Required Rate\%} = \frac{0.80}{20} \times 100 = 4\%$$

- 32. (a)** Rate% = 5%
Time = 2 years
SI for 2 years = $5 \times 2 = 10\%$
CI for 2 years = 10.25%
According to the question,

$$\text{Required SI} = \frac{328}{10.25} \times 10 = \text{Rs. 320}$$

- 33. (c)** **Note:** In such type of questions use given below formula, when 2 years CI and SI difference is given.

नोट: इस प्रकार के प्रश्नों में नीचे दी गयी विधि का प्रयोग करें, जब 2 वर्षों का चक्रवृद्धि ब्याज तथा साधारण ब्याज का अंतर दिया गया हो।

$$\text{Principal} = \frac{\text{Difference} \times 100^2}{R^2}$$

Where = R = Rate%
Principal = Rs. 1000,
Time = 2 years,
Difference = Rs. 10
Put the value in formula,

$$1000 = \frac{10 \times 100^2}{R^2}$$

$$1000 = \frac{100000}{R^2} = R = 10\%$$

Alternate/वैकल्पिक विधि:

Note: (इम इस प्रकार के प्रश्नों का हल विकल्पों का प्रयोग करके भी कर सकते हैं)

Option (C): Rate % = 10%

SI for 2 years = $10 \times 2 = 20\%$

$$\text{CI for 2 years} = 10 + 10 + \frac{10 \times 10}{100}$$

Difference in Rates = $(21 - 20) = 1\%$

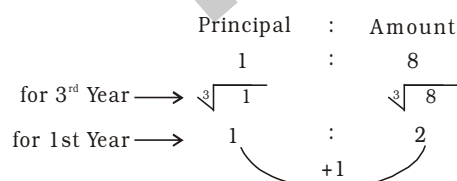
$$\text{Required difference} = 1000 \times \frac{1}{100} = \text{Rs. } 10$$

Hence, The difference between CI and SI is same as mentioned in question.
Hence option (C) is correct.

(प्रश्न के अनुसार चक्रवृद्धि ब्याज तथा साधारण ब्याज का अंतर बराबर है, इसलिए विकल्प (c) सही है।)

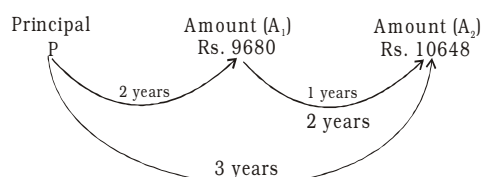
34. (d) Required sum = $\frac{8}{0.16} \times 100 = \text{Rs } 5000$

35. (a) Let principal = 1 unit
 \therefore Amount = $1 \times 8 = 8$ units
According to the question,



$$\text{Required rate \%} = \frac{1}{1} \times 100 = 100\%$$

36. (b) Let Rate% = R%
Let Principal = Rs. P
According to the question,



Required Rate%

$$= \frac{(10648 - 9680)}{9680} \times 100 = 10\%$$

37. (b) Rate% = 4%
Time = 2 years
Difference between CI and SI = Rs. 10

$$\text{Difference} = \frac{R^2}{100} = \frac{(4)^2}{100} = 0.16\%$$

0.16% of sum = Rs. 800

$$\text{Sum} = \frac{800}{0.16} \times 100 = \text{Rs. } 5,00,000$$

38. (b) Rate% = 4%,
Time = 2 years
Difference between CI and SI = Rs. 10

$$\text{Difference} = \frac{R^2}{100} = \frac{(4)^2}{100} = 0.16\%$$

0.16% of sum = Rs. 10

$$\text{Sum} = \frac{10}{0.16} \times 100 = \text{Rs. } 6225$$

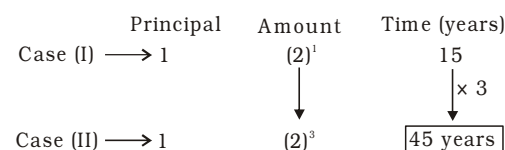
hence required sum = Rs. 2500

39. (a) $\text{Difference} = \frac{R^2}{100} = \frac{(4)^2}{100} = 0.16\%$

According to the question,
0.16% of sum = Rs. 4

$$\text{Sum} = \frac{4}{0.16} \times 100 = \text{Rs. } 2500$$

40. (b) **Note:** For detailed solution of such type of question follow the solution of previous question,
(इस प्रकार के प्रश्नों के विस्तृत हल के लिए पिछले प्रश्नों के हलों को देखें।)
Let Principal = 1 unit



Hence required time = **44 years**

41. (c) Principal = Rs. 16000,
Rate % = 20%
Time = 9 months
When interest is being compounded quarterly (जब ब्याज तिमाही संयोजित होता है),

$$\text{Time} = \frac{9}{12} \times 4 = 3$$

$$\text{Rate} = \frac{20}{4} \% = 5\% = \frac{1}{20}$$

Principal	Amount
20	21
20	21
20	21
<hr/> 8000	<hr/> 9261
	+1261

According to the question,
 8000 units = Rs. 16000
 1 units = Rs. 2
 1261 units = Rs. 2×1261
 = Rs. 2522

42. (c) $R_1 = 4\%$, $R_2 = 5\%$, $R_3 = 6\%$

$$4\% = \frac{1}{25}, 5\% = \frac{1}{20}, 6\% = \frac{3}{50}$$

Principal	Amount
25	26
20	21
50	53
<hr/> 25000	<hr/> 28938
	+3938

According to the question,
 25000 units = 10,000
 3938 units = 0.4×3938 = Rs. 1575.20

43. (b) Time (t) = 2 years,
 Rate% = 4%

Effective Rate of CI for 2 years (2 वर्ष के लिए चक्रवृद्धि ब्याज की दर)

$$= 4 + 4 + \frac{4 \times 4}{100} = 8.16\%$$

Effective Rate of SI for 2 years (2 वर्ष के लिए साधारण ब्याज की प्रभावी दर) = 8%

According to the question,

8.16% of sum = Rs. 2448

$$1\% \text{ of sum} = \text{Rs. } \frac{2448}{8.16}$$

$$8\% \text{ of sum} = \frac{2448}{8.16} \times 8 = \text{Rs. } 2400$$

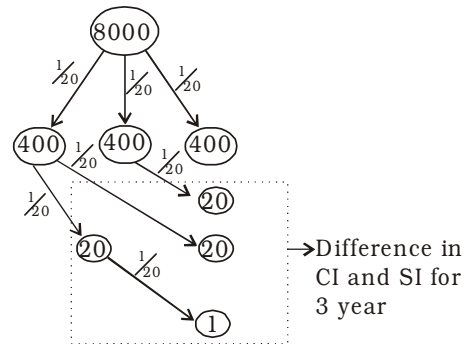
44. (a) Time = 3 years, Rate = 5%
 Difference between CI & SI = Rs. 15.25
 Effective Rate% CI in 3 years = 15.7625%
 Effective Rate% SI in 3 years = $5 \times 3 = 15\%$
 According to the question,
 (15.7625 - 15%) of sum = Rs. 15.25

$$\text{Sum} = \frac{15.25}{0.7625} \times 100 = \text{Rs. } 2000$$

Alternate/वैकल्पिक विधि:

$$\text{Rate}\% = 5\% = \frac{1}{20}$$

Let total principal = $(20)^3 = 8000$ units



According to the question,
 61 units = Rs. 15.25

$$8000 \text{ units} = \frac{15.25 \times 8000}{61} = \text{Rs. } 2000$$

Hence Required sum = Rs. 2000

45. (c)

Rate% = 8% Time = 2 years

Effective Rate% of CI for 2 years (2 वर्ष के लिए चक्रवृद्धि ब्याज की प्रभावी दर)

$$= 8 + 8 + \frac{8 \times 8}{100} = 16.64\%$$

Effective Rate% of SI for 2 years (2 वर्ष के लिए साधारण ब्याज की प्रभावी दर) = $8 + 8 = 16\%$

Difference in Rate (दरों का अंतर)

$$= (16.64 - 16) = 0.64\%$$

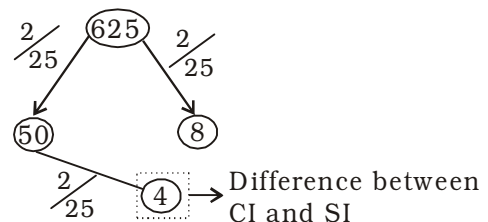
According to the question,
 0.64% of sum Rs. 768

$$\text{Sum} = \frac{768}{0.64} \times 100 = \text{Rs. } 1,20,000$$

Alternate/वैकल्पिक विधि:

$$\text{Rate} = 8\% = \frac{8}{100} = \frac{2}{25}$$

$$\text{Let sum} = (25)^2 = 625 \text{ units}$$



according to the question,

4 units = Rs. 768

1 units = Rs. 192

$$625 \text{ units} = \text{Rs. } 192 \times 625 = \text{Rs. } 1,20,000$$

46. (b)

Principal (P_1) = Rs. 6000.

Rate% = Rs. 768

t = 2 years

$$\text{Simple Interest} = \frac{6000 \times 5 \times 2}{100} = \text{Rs. } 600$$

Principal (P) = Rs. 5000,

Rate% = 8%, $t = 2$ years

2 years effective Rate for CI

$$= 8 + 8 + \frac{8 \times 8}{100} = 16.64\%$$

$$\text{compound interest} = 5000 \times \frac{16.64}{100} \\ = \text{Rs. } 832$$

Difference = Rs. (832 - 600) = Rs. 232

47. (a) $4\% = \frac{1}{25}$, $3\% = \frac{3}{100}$

	Principal	Amount
First year	25	26
IInd year	100	103
	2500	2678
	+178	

According to the question,
2500 units = Rs. 2000

$$1 \text{ units} = \text{Rs. } \frac{2000}{2500}$$

$$178 \text{ units} = \text{Rs. } \frac{2000}{2500} \times 178 \\ = \text{Rs. } 142.40$$

Alternate/वैकल्पिक विधि:

Principal = 2 years

Ist year Rate% = 4%

IInd year Rate% = 3%

Total CI = (80 + 64 + 2.4) = **Rs. 142.40**

48. (a) Principal = Rs. 32000

CI = Rs. 5040

Amount = (32000 + 5040) = Rs. 37044

Time = 9 months, Let Rate = R%

Interest is being compounded quarterly
(ब्याज तिमाही संयोजित होता है)

$$\text{Time} = \frac{9 \times 4}{12} = 3$$

Rate% = 4 R%

According to the question,

	Principal	Amount
	32000	37044
3rd year	8000	9261
Ist year	$\sqrt[3]{8000}$	$\sqrt[3]{9261}$
	20	21
	+178	

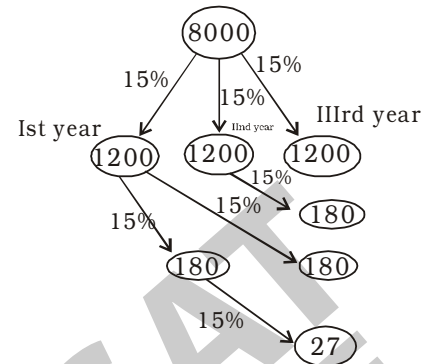
$$\text{Required Rate\%} = \frac{1}{20} \times 100 = 5\%$$

New Rate% = 4R% = 4 × 5 = 20%

Principal = Rs. 8000,

Rate = 15%

Time = 2 years 4 months



12 months CI for 3rd year

$$= (1200 + 180 \times 2 + 27)$$

$$= (1200 + 360 + 27)$$

12 months CI for 3rd year = 1587

$$= \frac{1587}{12} \times 4 = 529$$

Total CI = (1200 × 2 + 180 + 529) = Rs. 3109

50. (c) Time = 2 years, Rate = 10%

Case (I): When interest compounded annually (जब ब्याज वार्षिक संयोजित होता है)

$$2 \text{ years CI Rate\%} = 10 + 10 + \frac{10 \times 10}{100} \\ = 21\%$$

2 years SI Rate% = 10 + 10 = 20%

According to the question,

(21 - 20)% of sum = Rs. 28

$$\text{sum} = \frac{29}{1} \times 100 = \text{Rs. } 2800$$

Case (II): When interest is compounded half-yearly (जब ब्याज अर्धवार्षिक संयोजित होता है).

$$\text{Rate\%} = \frac{10}{2} = 5\%$$

Time = 2 × 2 = 4

Effective Rate% of CI for 2 half yearly
(2 छमाही के लिए चक्रवृद्धि ब्याज की प्रभावी दर)

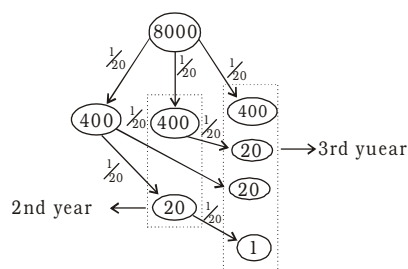
$$= 5 + 5 + \frac{5 \times 5}{100} = 10.25\%$$

Effective Rate % of CI for 2 half yearly
(4 छमाही के लिए चक्रवृद्धि ब्याज की प्रभावी दर)

$$\begin{aligned}
 &= 10.25 + 10.25 + \frac{10.25 \times 10.25}{100} \\
 &= 20.25 + 1.050625 = 21.55\% \\
 &\text{Effective Rate\% of SI for 4 years (4 वर्ष के लिए साधारण ब्याज की प्रभावी दर)} \\
 &= 5 \times 4 = 20\% \\
 &\text{Difference in Rate\%} = (21.55 - 20) \\
 &= 1.55\% \\
 &\text{Required Difference} = \text{Rs. } 43.4
 \end{aligned}$$

51. (c) Rate% = $\frac{1}{20}$, Time = 3 years

Let principal = $(20)^3 = 8000$ units



Difference of interest for 3 years and 2 years (3 वर्ष के लिए ब्याज तथा 2 वर्ष के ब्याज में अंतर) $(400 + 20 + 20 + 1) = 441$
According to the question, 8000 units = Rs. 6000

$$1 \text{ unit} = \text{Rs. } \frac{6000}{8000}$$

$$441 \text{ units} = \text{Rs. } \frac{6000}{8000} \times 441 = \text{Rs. } 330.75$$

52. (a) Rate % = 10% Time = 2 years
Effective Rate% of CI for 2 years

$$= 10 + 10 + \frac{10 \times 10}{100} = 21\%$$

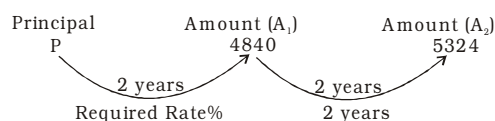
$$\text{Effective Rate of SI for 2 years} = 10 + 10 = 20\%$$

$$\text{Difference in Rate\%} = (21 - 20)\% = 1\%$$

According to the question,
1% of sum = Rs. 40

$$\text{Sum} = \text{Rs. } \frac{40}{1} \times 100 = \text{Rs. } 4000$$

53. (a) Amount $(A_1) = \text{Rs. } 4840$
Amount $(A_2) = \text{Rs. } 5324$
Let the principal = Rs. P



$$= \frac{(5324 - 4840)}{4840} \times 100 = 10\%$$

$$= \frac{1}{25} = \frac{26 \rightarrow \text{installment}}{25 \rightarrow \text{Amount}}$$

Amount

Installment

$$\begin{aligned} \text{Ist year} &\rightarrow 25_{\times 26} : 26 \\ \text{IIInd year} &\rightarrow 625 : 676 \end{aligned}$$

Note: Installment is same in both cases. Hence equal the installment.
दोनों स्थितियों के किस्त बराबर होगा, इसलिए किस्त को बराबर करें।

Hence after that new ratio,

	Amount	Installment
Ist year	650	676
IIInd year	625	676
	1275	

According to the question,
676 unit = Rs. 16224

$$1 \text{ unit} = 24$$

$$1275 \text{ units} = 24 \times 1275 = \text{Rs. } 30600$$

$$\text{Total amount} = \text{Rs. } (30600 + 16224)$$

55. (c) Rate $(R_1) = 4\%$ $t_1 = 1$ year

Case (I): Rate (%) = 4%

Case (II): When interest is compounded half-yearly (जब ब्याज अर्धवार्षिक संयोजित होता है)

$$\text{New Rate\%} = \frac{6}{2} = 3\%$$

$$\text{Time } (t_2) = 1 \times 2 = 2 \text{ years}$$

Effective Rate% for 2 years (2 वर्ष के लिए

$$\text{प्रभावी दर}) = 3 + 3 + \frac{3 \times 3}{100} = 6.09\%$$

$$\text{Difference in Rates} = (6.09 - 4)\% = 2.09\%$$

According to the question,
2.09% of sum = Rs. 104.50

$$\text{Sum} = \text{Rs. } \frac{104.50}{2.09} \times 100 = \text{Rs. } 5000$$

56. (d) Compound interest = Rs. 1261,

$$\text{Time} = 3 \text{ years, Rate \%} = 5\% = \frac{1}{20}$$

Principal	Amount
20	21
20	21
20	21
8000	9261
	1261

According to the question, 1261 units = Rs. 1261

$$1 \text{ unit} = \text{Rs. } \frac{1261}{1261} = \text{Rs. } 1$$

$$8000 \text{ units} = 8000 \times 1 = \text{Rs. } 8000$$

57. (c) Rate% = 4% time (t_1) = 1 year

Amount = Rs. 7803

When interest is compounded half yearly (जब ब्याज अर्धवार्षिक संयोजित होता है).

$$\text{New Rate\%} = \frac{4}{2} = 2\%$$

$$\text{Time} = 1 \times 2 = 2 \text{ years}$$

Required Rate% for 2 years CI

$$= 2 + 2 + \frac{2 \times 2}{100} = 4.04\%$$

According to the question,

$$(100 + 4.04)\% \text{ of sum} = \text{Rs. } 7803$$

$$\text{Sum} = \frac{7803}{104.04} \times 100 = \text{Rs. } 7500$$

Alternate/वैकल्पिक विधि:

time = 2 years,

$$\text{Rate \%} = \frac{4}{2} = 2\% = \frac{1}{50}$$

Principal	Amount
50	51
50	51
2500	2601
+101 units	

According to the question,

$$2601 \text{ units} = \text{Rs. } 7803$$

$$1 \text{ units} = \text{Rs. } \frac{7803}{2601} = \text{Rs. } 3$$

$$2500 \text{ units} = \text{Rs. } 3 \times 2500 = \text{Rs. } 7500$$

$$\therefore \text{Hence sum} = \text{Rs. } 7500$$

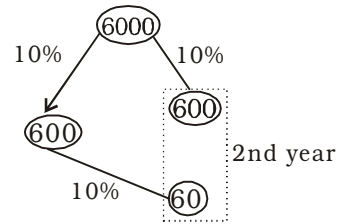
$$58. (a) \text{ Rate } 8\% = 8 \frac{3}{4}\% = \frac{7}{80} = \frac{2}{25}$$

Principal	Amount
25	27
27	27
625	729
↓	↓ × 8
5000	5832

Hence Required Sum = Rs. 5000

59. (c) P = Rs. 6000, Rate% = 10%,

$$\text{Time } (t_1) = 1 \frac{1}{2} \text{ years}$$



$$2^{\text{nd}} \text{ year CI} = 660$$

$$6 \text{ months } 2^{\text{nd}} \text{ year CI} = 330$$

$$\text{Total CI} = (600 + 330) = 930$$

$$\text{SI for 1 year} = \text{Rs. } 260$$

$$\text{SI for 2 year} = 26 \times 2 = \text{Rs. } 520$$

$$\text{Difference in (CI - SI)}$$

$$(540.80 - 520) = \text{Rs. } 20.8$$

$$\text{Required Rate\%} = \frac{20.8}{260} \times 100 = 8\%$$

60. (c) Rate% = 4%, Time (t_1) = 2 years

$$\text{SI for 2 years} = 4 \times 2 = 8\%$$

$$\text{CI for 2 years} = 4 + 4 + \frac{4 \times 4}{100} = 8.16\%$$

$$\text{Required Rate\%} = \frac{80}{8} \times 8.16 = \text{Rs. } 81.6$$

62. (d) Effective Rate% of CI for 2 years (2 वर्षों के लिए चक्रवृद्धि ब्याज की प्रभावी दर)

$$= 5 + 5 + \frac{5 \times 5}{100} = 10.25\%$$

Effective Rate of SI for 3 years (2 वर्ष के लिए साधारण ब्याज की प्रभावी दर) = $6 \times 3 = 18\%$

According to the question,

$$\text{Required SI} = \frac{246}{10.25} \times 18 = \text{Rs. } 432$$

63. (d) SI for 2 years = Rs. 900

$$\text{SI for 1 years} = \frac{900}{2} = \text{Rs. } 450$$

$$\text{CI for 1 years} = \text{Rs. } 950$$

$$\text{Difference between CI for SI}$$

$$= (954 - 900) = \text{Rs. } 54$$

$$\text{Required Rate\%} = \frac{54}{450} \times 100 = 12\%$$

$$\text{required sum} = \frac{450}{12} \times 100 = \text{Rs. } 3750$$

64. (a) Rate% = 5%, Time = 3 years

$$\text{Let principal} = (20)^3 = 8000 \text{ units}$$

According to the question,

$$(20 + 20 + 20 + 1) \text{ units} = \text{Rs. } 122$$

$$61 \text{ units} = \text{Rs. } 2$$

$$1 \text{ imots} = \text{Rs. } 2 \times 8000 = \text{Rs. } 16000$$

∴ Hence Required sum = Rs. 16000
65. (d) Amount After three years (3 वर्ष के बाद मिश्रधन) = Rs. 2662
 Amount After three years (2 वर्ष के बाद मिश्रधन) = Rs. 2420
 ⇒ Net interest earned in the IIIrd years (तीसरे वर्ष प्राप्त ब्याज) = 2662 - 2420 = Rs. 242
 ⇒ Rate of interest (r)

$$= \frac{242}{2420} \times 100 = 10\%$$
 (∴ दूसरे वर्ष का मिश्रधन तीसरे वर्ष का मूलधन है)

66. (c) Rate of interest $r = 12\frac{1}{2}\% = \frac{1}{8}$

Year	Principal	Installment
⇒ I	8 _{x9}	9 _{x9} (i)
⇒ II	64	81 (ii)

Since, Installment is equal hence multiply equation (i) by 9 (चूँकि किस्त बराबर है इसलिए समीकरण (i) को 9 से गुणा कर दें)
 ⇒ Total principal = 72 + 64 = 136 units
 136 unit → 6800
 1 unit → 50
 81 units → 4550
 ⇒ Each installment (प्रत्येक किस्त) = Rs. 4050

67. (b) Rate of interest (r)

$$= 8\frac{3}{4}\% = \frac{7}{80} = \frac{87}{80} \rightarrow \frac{\text{Installment}}{\text{Principal}}$$
 ⇒ I 80_{x87} → 87_{x87} (i)
 ⇒ II 6400 → 7569 (ii)
 Since, installment is equal hence multiply equation (i) (चूँकि किस्त बराबर है इसलिए बसमीकरण (i) को 87 से गुणा कर दें)
 ⇒ Total principal = 6960 + 6400 = 13360
 ⇒ 13360 units = Rs. 133620
 ⇒ 7569 units = Rs. 1
 ⇒ 7569 units = 7569
 ∴ Each installment = 7569

68. (b) $5\% = \frac{1}{20} = \frac{21}{20} \rightarrow \frac{\text{Installment}}{\text{Principal}}$

Year	Principal	Installment
⇒ I	20 _{x21}	21 _{x21} (i)
⇒ II	400	441 (ii)

Since installment is equal hence multiply equation (i) by 21 (चूँकि किस्त बराबर है इसलिए समीकरण (i) को 21 से गुणा कर दें)

⇒ Total principal = 420 + 400 = 820 units
 ⇒ 820 units → Rs. 12300
 ⇒ 1 unit → Rs. 15
 ⇒ 441 units → Rs. 6615
 ⇒ Each installment (प्रत्येक किस्त) = Rs. 6615

69. (a) In these type of questions go through options to save your valuable time. (इस प्रकार के प्रश्नों अपने बहुमूल्य समय की बचत के लिए विकल्पों का सहारा लें)
 Option (a) ⇒ Rate of interest = 5%

$$\Rightarrow \text{Amount} = \text{Principal} \left(1 + \frac{\text{rate}}{100}\right)^n$$

$$\Rightarrow 1102.5 = 1000 \left(1 + \frac{5}{100}\right)^2$$

$$\Rightarrow \frac{1102.5}{1000} = \frac{441}{400}$$

$$\Rightarrow 1.1025 = 1.1025$$

$$\Rightarrow \text{L. H. S} = \text{R. H. S}$$

Option (a) is correct.

70. (a) Effective rate for half year (6 माह के लिए

$$\text{प्रभावी दर} = \frac{10}{2} = 5\%$$

Time = 2n years

$$\Rightarrow 936.10 = 800 \left(1 + \frac{5}{100}\right)^{2n}$$

$$\Rightarrow \frac{926.10}{800} = \left(\frac{21}{20}\right)^{2n}$$

$$\Rightarrow \left(\frac{21}{20}\right)^3 = \left(\frac{21}{20}\right)^{2n}$$

$$\Rightarrow 2n = 3 \Rightarrow n = \frac{3}{2}$$

$$\Rightarrow \text{Required time} = \frac{3}{2} = 1\frac{1}{2} \text{ years}$$

71. (d) Amount = $6000 \left(1 + \frac{5}{100}\right)^2$

$$\Rightarrow \text{Amount} = 6000 \times \frac{21}{20} \times \frac{21}{20}$$

$$\Rightarrow \text{Amount} = \text{Rs. 6615}$$

72. (d)

Year	Principal	Amount
5	1 →	2
10	2 →	4
15	4 →	8
20	8 →	16

\Rightarrow Amount After 20 years = 16×12000
= Rs. 1,92,000

73. (a) Principal Amount
1 \rightarrow 4

$$\Rightarrow 4 = 1 \left(1 + \frac{r}{100} \right)^2$$

$$\Rightarrow 4 = \left(1 + \frac{r}{100} \right)^2$$

$$\Rightarrow r = 100\%$$

Alternate/वैकल्पिक विधि:

Principal Amount

$$\sqrt[2]{1} \rightarrow \sqrt[2]{4}$$

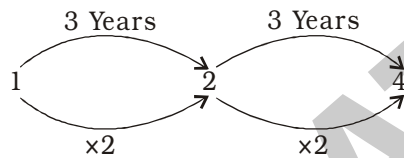
$$\Rightarrow 1 \rightarrow 2$$

$$\Rightarrow \text{Rate of interest} = \frac{(2-1)}{1} \times 100$$

74. (b) Year Principal Amount
3 1 \rightarrow 2
6 2 \rightarrow 4

\Rightarrow The amount becomes four times in 6 years (राशि 6 वर्ष में 4 गुना हो जाएगी)

Alternate/वैकल्पिक विधि:



\Rightarrow The amount becomes four times in (राशि 6 वर्ष में 4 गुना हो जाएगी 3 + 3 = 6 years)

75. (b) Rate of interest = $20\% = \frac{1}{5}$

$$\text{Let Principal} = (5)^2 = 25$$

$$\Rightarrow 1 \text{ unit} \rightarrow \text{Rs. } 48$$

$$\Rightarrow \text{Principal} = 48 \times 25 = \text{Rs. } 1200$$

76. (a) For 2 years

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

Where D = Difference between CI & SI

(चक्रवृद्धि ब्याज तथा साधारण ब्याज में अंतर)

P = Principal

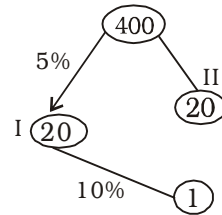
R = Rate of interest

$$\Rightarrow \frac{25}{10000} = \frac{r^2}{10000}$$

$$\Rightarrow r^2 = 25 \Rightarrow r = 5\%$$

77. (b) Rate of interest = $5\% = \frac{1}{20}$

$$\text{Let principal} = (20)^2 = 400$$



$$\Rightarrow 1 \text{ unit} \rightarrow \text{Rs. } 6$$

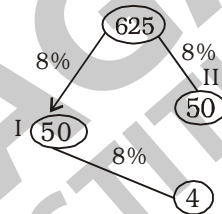
$$\Rightarrow 400 \text{ units} \rightarrow \text{Rs. } 2400$$

$$\Rightarrow \text{Principal} = \text{Rs. } 2400$$

78. (c) When the money is compounded half yearly the effective rate of interest for 6 months (जब राशि अर्धवार्षिक संयोजित होती है, तो 6 माह के लिए प्रभावी ब्याज दर)

$$= \frac{16}{2} = 8\% = \frac{2}{25}$$

$$\text{Let principal} = (25)^2 = 625$$



$$\Rightarrow 4 \text{ units} \rightarrow 56$$

$$\Rightarrow 1 \text{ units} \rightarrow 14$$

$$\Rightarrow \text{Principal} = 14 \times 625 = \text{Rs. } 8750$$

79. (b) Rate% 10%, time = 1 year

Case (I): When interest is calculate yearly, Rate% = 10%

Case (II): When interest is calculated half yearly.

$$\Rightarrow \text{New Rate\%} = \frac{10}{2} = 5\%$$

$$\text{Time} = 1 \times 2 = 2 \text{ years}$$

$$\Rightarrow \text{Effective Rate\%} = 5 + 5 + \frac{5 \times 5}{100}$$

$$= 10.25\%$$

$$\text{Difference in Rates} = (10.25 - 10\%) = 0.25\%$$

According to the question,

$$0.25\% \text{ of sum} = \text{Rs. } 180$$

$$\text{Sum} = \frac{180}{0.25} \times 100 = \text{Rs. } 72,000$$

80. (b) Principal = Rs. 5000, Time = 2 years

Let Rate = R%

Difference between CI and SI (चक्रवृद्धि ब्याज तथा साधारण ब्याज में अंतर) = Rs. 32 by using formula,

$$\text{Principal} = \frac{\text{Difference} \times 100^2}{R^2}$$

$$5000 = \frac{32 \times 100^2}{R^2}$$

$$R^2 = \frac{32 \times 10000}{5000} = 64$$

$$R = 8\%$$

Hence Required Rate% = 8%

81. (b)

Let principal = P,

Case (I): Time = 3 years,

Amount = 8P

$$8P = P \left(1 + \frac{R}{100} \right)^3$$

$$(2)^3 = \left(1 + \frac{R}{100} \right)^3$$

Takeing cube root of both sides (दोनों पक्षों का घनमूल लेने पर),

$$2 = \left(1 + \frac{R}{100} \right)$$

$$\Rightarrow R = 100\%$$

Case (II): Let after t years it will be 16 times (माना कि t वर्षों के बाद यह 16 गुना हो जाएगी)

$$16P = P \left(1 + \frac{R}{100} \right)^t$$

$$16 = (2)^t$$

$$(2)^4 = (2)^t$$

$$t = 4 \text{ years}$$

Hence Required time (t) = 4 years

Alternate/वैकल्पिक विधि:

Note : In such type of questions to save your valuable time follow the given below method.

नोट: इस प्रकार के प्रश्नों में अपने बहुमूल्य समय के बचत के लिए आप नीचे दी गयी विधि का प्रयोग कर सकते हैं।

Principal	Amount	Time (years)
1	$8 = 2^3$	3
1	$16 = 2^4$	$\frac{3}{3} \times 4 = 4 \text{ years}$

82. (c)

$$\begin{array}{cc} \xrightarrow{4 \text{ yrs}} & \xrightarrow{4 \text{ yrs}} \\ P \rightarrow 2 & P \rightarrow 4P \\ = 2 \times 4 = 8 \text{ years} \end{array}$$

83. (c)

Principal = Rs. 30,000

CI = Rs. 4347,

Rate% = 7%

By using formula,

$$\Rightarrow (30,000 + 4347) = 30,000 \left(1 + \frac{7}{100} \right)^t$$

$$34347 = 30,000 \left(1 + \frac{7}{100} \right)^t$$

$$\Rightarrow \frac{34347}{30,000} = \left(\frac{107}{100} \right)^t$$

$$\Rightarrow \left(\frac{11449}{10000} \right) = \left(\frac{107}{100} \right)^t$$

$$\Rightarrow \left(\frac{107}{100} \right)^2 = \left(\frac{107}{100} \right)^t$$

$$\Rightarrow t = 2 \text{ years}$$

84. (d)

Principal = Rs. 8000,

Amount = Rs. 8820

Let Rate% = R₁

Time = 2 years

By using formula,

$$8820 = 8000 \left(1 + \frac{R}{100} \right)^2$$

$$\frac{8820}{8000} = \left(1 + \frac{R}{100} \right)^2$$

$$\frac{441}{400} = \left(1 + \frac{R}{100} \right)^2$$

Takeing square root of both sides (दोनों पक्षों का वर्गमूल लेने पर),

$$\frac{21}{20} = \left(1 + \frac{R}{100} \right)$$

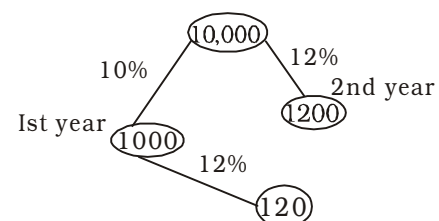
$$R = 5\%$$

85. (b)

P = Rs. 10,000,

t = 2 years

R₁ = 10%, R₂ = 12%



Amount = Principal + CI

Amount = 10,000 + (1000 + 1200 + 120) = Rs. 12320

86. (d)

Time = 2 years, Rate % = 10%

Effective Rate% of CI for 2 year (2 वर्ष के लिए साधारण ब्याज को प्रभावी दर)

$$= 10 + 10 + \frac{10 \times 10}{100}$$

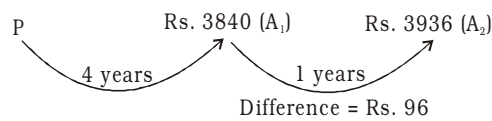
Effective Rate% of SI for 2 years (2 वर्ष के लिए साधारण ब्याज की प्रभावी दर)
 $= 2 \times 10 = 20\%$

$$\text{Required SI} = \frac{420}{21} \times 20 = \text{Rs. 400}$$

87. (c)	Principal	Amount	Time (years)
	1	$3^1 = 3$	3×2
	1	$9 = 3^2$	6 years

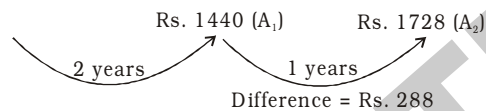
Hence Required time = 6 years

88. (c) Let the principal = Rs. P and the Rate of interest = R%



$$\text{Required Rate\%} = \frac{96}{3840} \times 100 = 2.5\%$$

89. (d) Let Principal = Rs. P



90. (d) Required Rate%
 $= \frac{(238.50 - 225)}{225} \times 100 = 6\%$

91. (c) Principal = Rs. 5000,
 Rate% = 10%
 Time = 2 years

$$\text{SI for 2 years} = \frac{5000 \times 2 \times 10}{100} = \text{Rs. 1000}$$

Note: When interest is compounded semi annually.

नोट: जब ब्याज अर्धवार्षिक संयोजित होता है।

$$\text{New Rate\%} = \frac{10}{2} = 5\%$$

$$\text{Time} = 2 \times 2 = 4 \text{ years}$$

Effective Rate% of for 4 years (4 वर्ष के लिए प्रभावी दर) = 21.55%

$$\text{Required CI} = \frac{5000 \times 21.55}{100}$$

$$\therefore \text{Require amt.} = \text{Rs. } (1077.53 - 1000) = \text{Rs. 77.53}$$

92. (d) Principal = Rs. 2000,

$$\text{Rate \%} = 5\% = \frac{1}{20}$$

time = 3 yers

Principal	Amount
20	21
20	21
20	21
8000	9261

Accoridn to the question,
 8000 units = Rs. 2000

$$1 \text{ unit} = \text{Rs. } \frac{2000}{8000}$$

$$9261 \text{ units} = \text{Rs. } \frac{2000}{8000} \times 9261 = \text{Rs. 2315.25}$$

93. (a) Let the time = t years,
 Rate% = 10%

Note: When interest is calculated semi-annually.

नोट: जब ब्याज अर्धवार्षिक संयोजित होता है।

New time = 2t years

$$\text{Rate \%} = \frac{10}{2} = 5\%$$

By ysing formula,

$$92610 = 80,000 \left(1 + \frac{5}{100}\right)^{2t}$$

$$\frac{9261}{8000} = \left(\frac{21}{20}\right)^{2t}$$

Comparing both sides,

$$2t = 3 \Rightarrow t = \frac{3}{2} \text{ years} = 1 \frac{1}{2} \text{ years}$$

94. (b) Principal = Rs. 21000,

$$\text{Rate} = 10\% = \frac{1}{10} \quad \frac{11}{10} \quad \frac{\text{Installment}}{\text{Principal}}$$

Principal	Installment
$10_{\times 11}$	$11_{\times 11}$
100	121

Note: Installment will be equal in both cases. So equate the installment.

According to the question,

$$210 \text{ units} = \text{Rs. } \frac{21000}{210} = \text{Rs. 100}$$

$$121 \text{ units} = 121 \times 100 = \text{Rs. 12100}$$

Alternate/वैकल्पिक विधि:

$$\text{Rate} \Rightarrow 10\% = \frac{1}{10}$$

Each Installment of 2 years (2 वर्ष की प्रत्येक किस्त)

$$\Rightarrow \frac{10}{11} \times \frac{(10+11)}{11} \times \text{installment} = P.A$$

$$= 21000$$

$$\text{Each Installment} = 12100$$

METHOD

$$R = 10\%$$

$$= \frac{1}{10} \Rightarrow \frac{10}{(10+1)} \Rightarrow \frac{10}{11} b$$

Installment for 2 year

$$= \frac{a}{b} \times \frac{(a+b)}{b} \times \text{installment} = P.A$$

Note: Each installment for three years
(3 वर्ष की प्रत्येक किस्त)

$$= \frac{a}{b^3} (a^2 + ab + b^2) \times \text{Installment} = P.A.$$

95. (b) Principal = Rs 5000

$$\text{Time} = 3 \text{ years, Rate\%} = 10\% = \frac{1}{10}$$

Principal Amount

10	11
10	11
10	11
1000	1331

331 units

$$1000 \text{ units} = \text{Rs } 5000$$

$$1 \text{ unit} = \text{Rs } 5$$

$$331 \text{ units} = 331 \times 5 = \text{Rs } 1655$$

96. (a) Rate% = 10%

Let time = t years

$$\text{Principal} = \text{Rs } 3200$$

$$\text{Amount} = \text{Rs } 3362$$

Note: When interest is calculated quarterly.

नोट: जब ब्याज तिमाही संयोजित होता है।

$$\text{New Rate\%} = \frac{10}{4} = 2.5\%$$

$$\text{Time} = 4t \text{ years}$$

By using formula,

$$3362 = 3200 \left(1 + \frac{2.5}{100} \right)^{4t}$$

$$\frac{3362}{3200} = \left(\frac{41}{40} \right)^{4t}$$

$$\Rightarrow \frac{1681}{1600} = \left(\frac{41}{40} \right)^2$$

$$\Rightarrow \left(\frac{41}{40} \right)^2 = \left(\frac{41}{40} \right)^{4t}$$

On coming both sides (दोनों पक्षों की तुलना करने पर),

$$4t = 2 \Rightarrow t = \frac{1}{2} \text{ years}$$

97. (a) Rate% = 12%

$$\text{Time} = 2 \text{ years}$$

Effective Rate% of CI for 2 years (2 वर्ष के लिए चक्रवृद्धि ब्याज की प्रभावी दर)

$$12 + 12 + \frac{12 \times 12}{100} = 25.44\%$$

Effective Rate% of SI for 2 years (2 वर्ष के लिए साधारण ब्याज की प्रभावी दर)

$$= 12 \times 2 = 24\%$$

According to the question,

$$\text{Required SI} = \frac{2544}{25.44} \times 24 = \text{Rs } 2400$$

$$\text{Required sum} = \text{Rs } 2400$$

$$\text{Amount} = \text{Rs } 2916$$

$$\text{Time} = 2 \text{ years,}$$

$$\text{Rate\%} = 8\%$$

Effective Rate% of CI for 2 years (2 वर्ष के लिए चक्रवृद्धि ब्याज की प्रभावी दर)

$$= 8 + 8 + \frac{8 \times 8}{100} = 16.64\%$$

$$\text{Required Sum} = \frac{2916}{(100 + 16.64)} \times 100$$

Required simple interest

$$= \frac{2500 \times 9 \times 3}{100} = \text{Rs } 675$$

99. (a) SI for 3 years = Rs 3000

$$\text{SI of 2 years} = \text{Rs } \frac{3000}{3} \times 2 = \text{Rs } 2000$$

$$\text{SI for 1 year} = \text{Rs } 1000$$

$$\text{CI for 2 years} = \text{Rs } 2050$$

$$\text{Required difference} = (2050 - 2000)$$

$$\text{Rs} = 50$$

$$\text{Required Rate\%} = \frac{50}{1000} \times 100 = 5\%$$

According to the question,

$$5\% \text{ of Sum} = 1000$$

$$\text{Sum} = \frac{1000}{5} \times 100 = \text{Rs } 20,000$$

100.(a) Required difference Rate%

$$= \frac{R^2}{100} = \frac{(5)^2}{100} = 0.25\%$$

$$\text{Required sum} = \frac{1.50}{0.25} \times 100 = \text{Rs } 600$$

101.(c) Effective Rate% of SI

$$= 10 + \frac{10}{2} = 15\%$$

Note:- When interest is compound Half yearly.

$$\text{New Rate} = \frac{10}{2} = 5\%$$

$$\text{Time} = \frac{3}{2} \times 2 = 3 \text{ years}$$

$$\text{Effective Rate\% of CI for 3 years} = 15.7625\%$$

$$\text{Difference in Rate\%} = (15.7625 - 15) = 0.7625\%$$

According to the question,
0.7625% of sum = Rs 244

$$\text{Sum} = \frac{244}{0.7625} \times 100 = \text{Rs } 32000$$

102.(b) Let the principal = 8 units

$$\text{Amount} = 8 \times \frac{27}{8} = 27 \text{ units}$$

	Principal	:	Amount
1st year →	8	:	27
1st year →	$3\sqrt[3]{8}$:	$3\sqrt[3]{27}$
1st year →	2	:	3
	+1 unit		

$$\text{Required Rate\%} = \frac{1}{2} \times 100 = 50\%$$

103.(b) Let principal = Rs P

Principal : Amount(A_1) : Amount(A_2)

P	:	7000	:	10,000
		4 years		4 years

Note : Amount will increase in multiple.

$$\therefore P \times \frac{10}{7} = 7000$$

$$P = \text{Rs } 4900$$

\therefore Hence required principal = Rs 4900

104.(b) Principal = Rs 250

$R_1 = 4\%$, $R_2 = 8\%$

Amount after 1st year (पहले वर्ष के बाद)

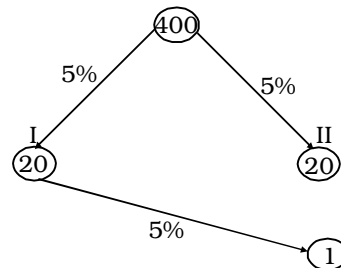
$$\text{मिश्रधन} = 250 \left(1 + \frac{4}{100} \right) = \text{Rs } 260$$

Amount after IInd year (दूसरे वर्ष के बाद)

$$\text{मिश्रधन} = 260 \left(1 + \frac{8}{100} \right) = \text{Rs } 280.80$$

105.(c) Rate of interest $5\% = \frac{1}{20}$

Let Principal = $(20)^2 = 400$ units



$$\Rightarrow \text{Total interest} = 41 \text{ units} \rightarrow \text{Rs } 328$$

$$1 \text{ unit} \rightarrow \text{Rs } 8$$

$$400 \text{ units} \rightarrow \text{Rs } 3200$$

$$\Rightarrow \text{Principal} = \text{Rs } 3200$$

106.(b) Rate of depreciation (कमी की दूरी)

$$= 4\% = \frac{1}{25}$$

Year	Value at the beginning	Value at the end
I	25	→ 24
II	625	→ 576

$$\Rightarrow 625 \text{ units} \rightarrow 62500$$

$$\Rightarrow 1 \text{ unit} \rightarrow 100$$

$$\Rightarrow 576 \text{ units} \rightarrow 57600$$

Present value of motorbike (मोटरसाइकिल की वर्तमान आयु) = Rs 57600

107.(b) Compound interest – Simple interest
 $615 - 600 = \text{Rs } 15$

Simple interest for one year (1 वर्ष का

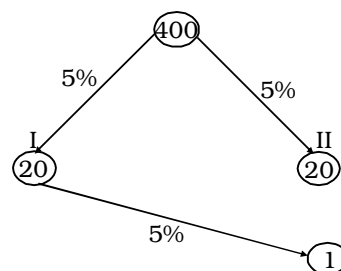
$$\text{साधारण ब्याज}) = \frac{600}{2} = \text{Rs } 300$$

$$\Rightarrow \text{Rate of interest} = \frac{15}{300} \times 100 = 5\%$$

$$\Rightarrow 5\% \text{ of principal} = \text{Rs } 300$$

$$\Rightarrow \text{Principal} = \text{Rs } 6000$$

108.(a) Rate of interest $5\% = \frac{1}{20}$



Let principal = $(20)^2 = 400$ units

⇒ Total compound interest

41 units → Rs 410

1 unit → Rs 10

40 units → Rs 400

⇒ Total simple interest = Rs 400

Alternate/वैकल्पिक विधि:

Total compound interest for 2 years at

5% p.a (2 वर्ष का 5 प्रतिशत वार्षिक ब्याज की दर

से कुल चक्रवृद्धि ब्याज) = $5 + 5 + \frac{5 \times 5}{100}$

Total simple interest = 10%

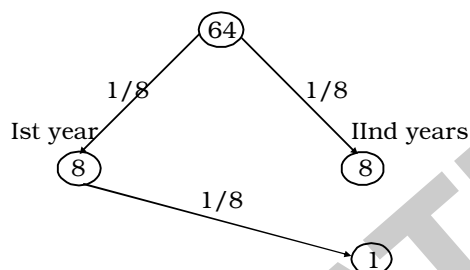
⇒ 10.25% → 410

⇒ 10% → 400

⇒ Simple interest = Rs 400

109.(d) Rate = $12\frac{1}{2}\% = \frac{1}{8}$

Let the principal = $(8)^2 = 64$ units



C.I. = $(8 + 8 + 1) = 17$ units

S.I. = $(8 + 8) = 16$ units

According to the question,

17 units → Rs 510

1 unit → Rs 30

16 units → $30 \times 16 = \text{Rs } 480$

∴ Simple interest = Rs 480

110.(a) Rate% = 5%, Time = 2 years

Effective Rate% of CI for 2 years (2 वर्ष के लिए चक्रवृद्धि ब्याज की प्रभावी दर)

$$= 5 + 5 + \frac{5 \times 5}{100} = 10.25\%$$

Effective rate% of SI for 3 years (3 वर्ष के लिए साधारण ब्याज की प्रभावी दर)

$$= 2 \times 5 = 10$$

According to the question,

$(10.25 - 10)\%$ of sum = Rs 25

$$\text{Sum} = \frac{25}{0.25} \times 100 = \text{Rs } 10,000$$

111.(c) Rate% = 10, Time = 2 years

Effective Rate% of CI for 2 year (2 वर्ष के लिए चक्रवृद्धि ब्याज की प्रभावी दर)

$$= 10 + 10 \frac{10 \times 10}{100} = 21\%$$

Effective rate% of SI for 2 year (2 वर्ष के लिए साधारण ब्याज की प्रभावी दर) = $2 \times 10 = 20\%$

According to the question,

1% of sum = Rs 300

Sum = Rs 3,00,00

Rate% = 10%

Time = 4 years

Effective Rate of CI for 4 years (4 वर्ष के लिए चक्रवृद्धि ब्याज की प्रभावी दर) = 46.41%

Effective Rate% of SI for 4 years (4 वर्ष के लिए साधारण ब्याज की प्रभावी दर) = 40%

According to the question,

Required difference (अभीष्ट अंतर)

$$= 32000 \times \frac{(46.41 - 40)}{100} = \text{Rs } 2051.20$$

113.(b) Principal = Rs 210

$$\text{Rate}\% = 10\% = \frac{1}{10} = \frac{1}{10} \rightarrow \text{Installment}$$

Principal	Installment
$10_{\times 11}$	$11_{\times 11}$
100	121

Note: Installment is same in both cases. So equate the installment.

नोट: दोनों स्थितियों में किस्त समान है, इसलिए किस्त को बराबर करें।

Principal	Installment
+ $\begin{pmatrix} 110 \\ -100 \end{pmatrix}$	$\begin{matrix} 121 \\ 121 \end{matrix}$
210	121

According to the question

210 units → Rs 210

1 unit → Rs 1

121 units → $1 \times 121 = \text{Rs } 121$

Hence required value of installment

(किस्त का अभीष्ट मान) = Rs 121

Alternate/वैकल्पिक विधि:

$$\text{Rate of interest (ब्याज की दूरी)} = 10\% = \frac{1}{10}$$

Each installment for 2 years (2 वर्षों की प्रत्येक किस्त)

$$\Rightarrow \frac{10}{11} \times \frac{(10 + 11)}{11} \times \text{Installment} = \text{P.A}$$

$$\Rightarrow \frac{10}{11} \times \frac{21}{11} \times \text{Installment} = 210$$

$$\Rightarrow \text{Installment} = 121$$

Method

Rate = 10%

$$= \frac{1}{10} = \frac{11 \rightarrow b}{10 \rightarrow a} \Rightarrow \frac{10}{(10+1)} b$$

For 2 years

$$= \frac{a}{b} \times \frac{(a+b)}{b} \times \text{Installment} = P.A$$

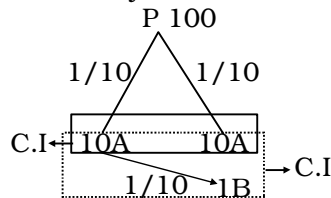
For 3 years

$$= \frac{a}{b^3} (a^2 + b^2 + ab) \times \text{Installment} = P.A$$

114.(d) Given Amt (दिया हुआ धन) = Rs 12100

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

Time = 2 year



Total amount for 2 year (2 वर्ष का मिश्रधन)

$$= 10 + 10 + 1 + 100 = 121$$

$$\Rightarrow 121 \text{ units} \rightarrow \text{Rs } 12100$$

$$\Rightarrow 1 \text{ unit} \rightarrow 100$$

$$\Rightarrow \text{Principal} = 100 \text{ unit} \\ = 100 \times 100 = 10000$$

115.(d) $540 = \frac{P \times R \times 3}{100}$

$$PR = 18000 \dots\dots (i)$$

$$CI = P \left[\left(1 + \frac{R}{100} \right)^2 - 1 \right]$$

$$376.20 = P \left[\left(1 + \frac{R}{100} \right)^2 - 1 \right]$$

$$= P \left[\frac{R^2}{(100)^2} + \frac{2R}{100} \right]$$

$$= \left[PR \times \frac{R^2}{(100)^2} + \frac{2PR}{100} \right]$$

$$= 18000 \frac{R}{(100)^2} + 2 \frac{18000}{100}$$

$$= 376.20 = 18 \times \frac{R}{10} + 360$$

$$= 376.20 - 360 = \frac{18R}{10}$$

$$R = \frac{162}{18} = 9\%$$

$$\text{From (i)} P \times R = 18000$$

$$P \times 9 = 18000$$

$$P = \text{Rs } 2000$$

116.(a) According to the question,

$$\text{Amount} = P \left(1 + \frac{R}{2 \times 100} \right)^3$$

$$= 2315.25 = 2000 \left(1 + \frac{R}{200} \right)^3$$

$$= \frac{2315.25}{2000} = \left(1 + \frac{R}{200} \right)^3$$

$$= \frac{231525}{200000} = \left(1 + \frac{R}{200} \right)^3$$

$$= \frac{9261}{8000} = \left(1 + \frac{R}{200} \right)^3 = \left(\frac{21}{20} \right)^3 =$$

$$\left(1 + \frac{R}{200} \right)^3$$

$$= 1 + \frac{R}{200} = \frac{21}{20} = R = 10\%$$

117.(a) According to the question,

$$\text{Amount} = \left(1 + \frac{R}{2 \times 100} \right)^{2xt}$$

$$\Rightarrow 68921 = 64000 \left(1 + \frac{5}{2 \times 100} \right)^{2xt}$$

$$\Rightarrow \frac{68921}{64000} = \left(1 + \frac{5}{40} \right)^{2xt}$$

$$\Rightarrow \left(\frac{41}{40} \right)^3 = \left(\frac{41}{40} \right)^{2xt}$$

$$\Rightarrow 2t = 3 \Rightarrow t = \frac{3}{2} \Rightarrow t = 1 \frac{1}{2} \text{ years}$$

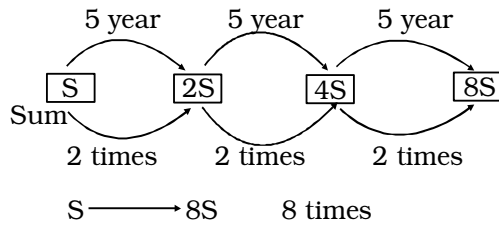
118.(a) $5\% = \frac{1}{20}$

	Amount	Installment
Ist year	$20 \times 21 = 420$	$21 \times 21 = 441$
IInd year	$20^2 \times 21 = 840$	$20^2 \times 21 = 840$

Make installment same

	Sum	Installment
Ist year	420	441
IInd year	400	441
	<hr/> 820	<hr/> 441
	$\downarrow \times 40$	$\downarrow \times 40$
	32,800 Ans	17,640

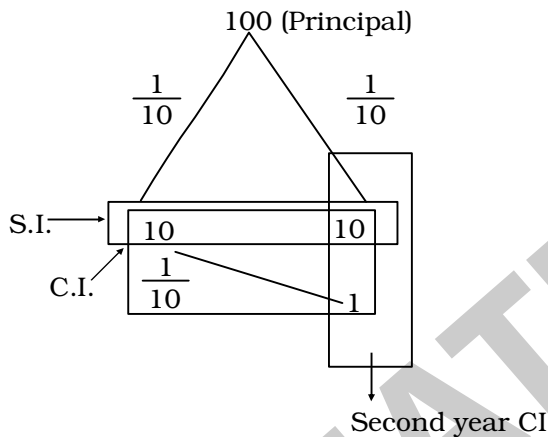
119.(a)



In 15 years (5 + 5 + 5)

120.(b) Let the principal (मूलधन) = Rs 100
According to the question

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



2nd year CI interest = 11 units

11 units = 132

1 unit = 12

100 units = $12 \times 100 = 1200$

\therefore Principal = Rs 1200

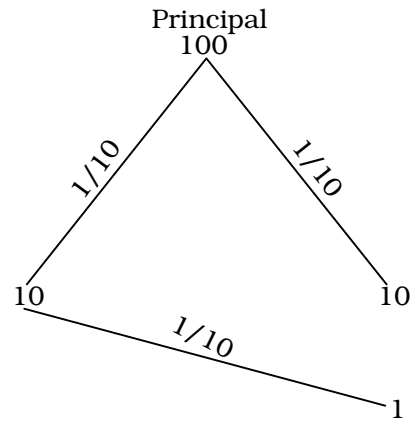
121.(b) According to the question,
Principal = Rs S
Rate = 2r% p.a
Time = 3 years

$$\therefore A = P \left(1 + \frac{R}{100}\right)^T = A = S \left(1 + \frac{2r}{100}\right)^3$$

$$A = S \left(1 + \frac{r}{50}\right)^3$$

122.(a) Let the principal (मूलधन) = Rs 100
According to the question,

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



Interest (ब्याज) = 21

Principal (मूलधन) = 100

Amount (मिश्रधन) = 21 + 100 = 121

121 units 2420

1 unit $\frac{2420}{121}$

100 units $\frac{2420}{121} \times 100 = 2,000$

\therefore Principal (मूलधन) = Rs 2000

123.(c) For 2 years
Difference between C.I and S.I
(साधारण तथा चक्रवृद्धि ब्याज का अंतर)

$$\Rightarrow C.I - S.I = P \left(\frac{R}{100}\right)^2$$

$$\Rightarrow 63 = P \times \left(\frac{5}{100}\right)^2$$

$$\Rightarrow 63 \times 20 \times 20 = P$$

\Rightarrow Principal (मूलधन) = Rs 25200

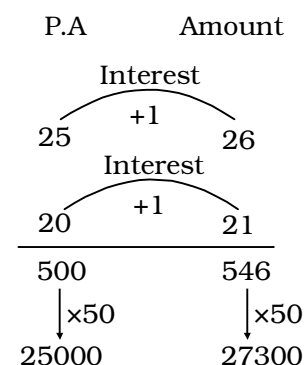
124.(b) With smart approach

\Rightarrow Principal Amt (मूलधन) = Rs 25000

\Rightarrow Time = 2 years

$\Rightarrow R_1 = 4\%$, $R_2 = 5\%$ Annually

$$\Rightarrow 4\% = \frac{1}{25}, 5\% = \frac{1}{20}$$



$$A = P \left(1 + \frac{R}{100} \right)^n$$

$$1348.32 = 1200 \left(1 + \frac{R}{100}\right)^n$$

$$\frac{134832}{120000} = \left(1 + \frac{R}{100}\right)^2$$

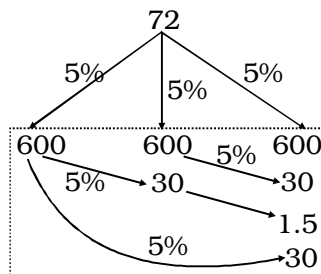
$$\frac{2809}{2500} = \left(1 + \frac{R}{100}\right)^2$$

$$\frac{53}{50} = 1 + \frac{R}{100} = R = 6\%$$

A = Rs 1348.32
Hence "C"

126.(a) P. A. = Rs 12000
 \therefore Interest being compounded quarterly
 effective R% (चक्रवृद्धि ब्याज तिमाही संयोजित
 होती है) = $\frac{20}{4} = 5\%$

$$\Rightarrow \text{Time} = \frac{20}{4} = \frac{3}{4} \times 4 = 3 \text{ years}$$



⇒ Total CI will be = Rs 1891.50

127.(c) $A = P \left(1 + \frac{1}{100} \right)^3$

$$\frac{1331}{1000} = \left(1 + \frac{R}{1000}\right)^3$$

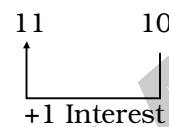
$$\left(\frac{11}{10}\right)^3 = \left(1 + \frac{R}{1000}\right)^3$$

$$\frac{11}{10}^{-1} = \frac{R}{100} = \frac{R}{100} = \frac{1}{10}$$

Rate (दर) = 10%

Alternate/ वैकल्पिक विधि:

A	P
$\sqrt[3]{1331}$	$\sqrt[3]{1000}$



So rate = $\frac{1}{10} \times 100 = 10\%$

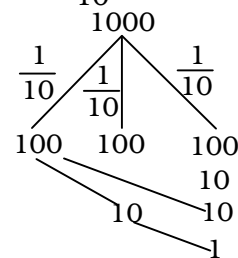
128.(b) According to the question

(प्रश्नानुसार),

P A T
 1 2 2
 1 4 4 year

129.(b) Let Principal = 1000, $r = 10\%$, $y = 3y$

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



$$\text{Amount} = \frac{\text{Interest} + 1}{\text{Principal}}$$

$$\Rightarrow 1331 \text{ unit} \longrightarrow 5324$$

$$1 \text{ unit} \longrightarrow \frac{5324}{1331}$$

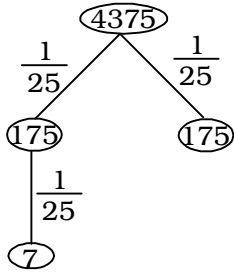
$$1000 \text{ unit} \longrightarrow \frac{5324}{1331} \times 1000$$
$$= 4000$$

130.(b) $SI = \frac{Prt}{100}$

$$350 = \frac{P \times 4 \times 2}{100}$$

$$\Rightarrow P = 4375$$

$$\therefore 4\% = \frac{1}{25}$$



$$C.I = 175 + 175 + 7 = 357$$

$$\text{Difference} = 357 - 350 = \text{Rs } 7$$

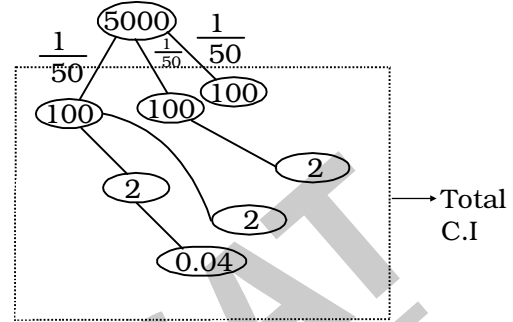
- 131.(a)** So for next 8 years it again becomes 3 times means 3×3 times = 9 times = 16 years
(इसलिए अगले 8 वर्ष के लिए यह पुनः 3 गुना हो जाएगा, मतलब 3×3 गुना)

- 132.(c)** In one year there are '4' quaterly month
(एक वर्ष में 4 चौथाई महीने होते हैं)

For 9 months – 3 quarter

$$\text{Change rate} = \frac{8}{4} = 2\%$$

$$2\% = \frac{1}{50}$$



$$\text{Total CI} = 300 + 6.04 = \text{Rs } 306.04$$

→ Total C.I