

Some Important terms of Compound interest

Case-I Without Using Formula

- (i) The money borrowed = Principal = ₹P
- (ii) Rate of interest =  $\gamma$  % p.a.
- (iii) Time = years for which money borrowed =  $t$  years
- (iv) S.I. For 1st year

$$S.I_1 = \frac{P \times \gamma \times 1}{100}$$

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Amount at the end 1st year →  $A_1 = P + S.I_1$

For 2nd year

Principal =  $P_2 = A_1$

S.I. For 2nd year →  $S.I_2 = \frac{P_2 \times \gamma \times 1}{100}$

Amount at the end of 2nd year →  $A_2 = P_2 + S.I_2$

for 3rd year → Principal =  $P_3 = A_2$

S.I. For 3rd year →  $S.I_3 = \frac{P_3 \times \gamma \times 1}{100}$

Amount at the end of 3rd year =  $A_3 = P_3 + S.I_3$

At the end of 3rd year, Compound Interest (C.I)

$$C.I = A_3 - P$$

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Example ①  
Q.1 Calculate the compound interest for the 2nd year  
on ₹ 8000 invested for 3 years at 10%  
Per Annum.

Soln  
For 1st year  $\rightarrow P_1 = P_0 = ₹ 8000$   
Rate =  $r = 10\% \text{ p.a.}$

$$S.I_1 = \frac{P_1 \times r \times 1}{100} = \frac{8000 \times 10 \times 1}{100}$$

$$S.I_1 = ₹ 800$$

Amount at the end 1st year =  $A_1 = P + S.I_1$

$$A_1 = 8000 + 800$$

For 2nd year (2nd year)

$$A_1 = ₹ 8800$$

$$P_2 = A_1 = ₹ 8800$$

$$S.I_2 = \frac{P_2 \times r \times 1}{100} = \frac{8800 \times 10 \times 1}{100} = ₹ 880$$

Amount at the end of 2nd year =  $A_2 = P_2 + S.I_2$

$$A_2 = 8800 + 880$$

$$A_2 = ₹ 9680$$

Q (C-I) Example See the steps of solution  
(2) Calculate the compound interest due in  $2\frac{1}{2}$  years on ₹ 6000 at 10% compounded annually.

Soln  
For 1st year →  $P_1 = ₹ 6000$ ,  $r = 10\%$ ,  $t = 1 \text{ year}$

$$S.I_1 = \frac{P_1 \times r \times t}{100} = \frac{6000 \times 10 \times 1}{100} = ₹ 600$$

∴ For at the end of 1st year Amount =  $A_1$

$$A_1 = P_1 + S.I_1 = 6000 + 600$$

$$A_1 = ₹ 6600$$

For 2nd year →  $P_2 = A_1 = ₹ 6600$ ,  $r = 10\%$

$$S.I_2 = \frac{P_2 \times r \times t}{100} = \frac{6600 \times 10 \times 1}{100} = ₹ 660$$

At the end of 2nd year, Amount =  $A_2 = P_2 + S.I_2$

$$A_2 = 6600 + 660 = 7260$$

For Last  $\frac{1}{2}$  year →  $P_3 = A_2 = ₹ 7260$ ,  $r = 10\%$

$$S.I_3 = \frac{P_3 \times r \times t}{100} = \frac{7260 \times 10 \times 1}{100 \times 2} = \frac{726}{2}$$

$$S.I_3 = ₹ 363$$

∴ At the end of Last  $\frac{1}{2}$  year, Amount =  $A_3 = P_3 + S.I_3$

$$A_3 = 7260 + 363 = ₹ 7623$$

At End  
∴ Compound Interest (C.I) =  $A_3 - P_1 = 7623 - 6000$   
= ₹ 1623.

Q 1. ₹ 8000 is lent at 5% Compound Interest per year for 2 years. Find the Amount and C.I.

[8,820 and ₹ 820]

Q 2 Calculate the Difference between the compound interest and the S.I. on ₹ 4000 at 8% P.a. and in 2 years.

[Ans. ₹ 25.60]

Q 3 A man invests ₹ 5600 at 14% P.a Compound Interest for 2 years. Calculate

(i) The interest for the First year

[Ans. (i) ₹ 784

(ii) The amount at the end of the First year.

(ii) ₹ 6384

(iii) The interest for the second year.

(iii) ₹ 894

Q 4 Calculate the Compound Interest for the second year on ₹ 8000 invested for 3 years at 10% P.a.

[Ans. ₹ 880]

Note: (i) At First Write and Read all the Formula and Theories (Methods) which explained in 1st Page.

(ii) Re-solve the Examples which done in 2nd-3rd Pages. [by Sonu Sir].