Simple & Compound Interest

1. **Principal:**
   The money borrowed or lent out for a certain period is called the **principal** or the **sum**.
2. **Interest:**
   Extra money paid for using other's money is called **interest**.
3. **Simple Interest (S.I.):**
   If the interest on a sum borrowed for certain period is reckoned uniformly, then it is called **simple interest**.

   Let Principal = P, Rate = R% per annum (p.a.) and Time = T years. Then

   (i). Simple Interest = $\left(\frac{P \times T \times R}{100}\right)$

   (ii). $P = \left(\frac{100 \times S.I.}{R \times T}\right)$; $R = \left(\frac{100 \times S.I.}{P \times T}\right)$ and $T = \left(\frac{100 \times S.I.}{P \times R}\right)$.

Simple Interest questions:

1. Find SI on Rs 1600 for 3 years at 5% per annum.

2. On what sum of money will the simple interest for 3 years at 5%p.a is Rs 450 ?

3. In what time will the simple interest on Rs 1600 at 4% be Rs 256.

4. At what rate percent per annum will the SI on Rs 8000 for 2 years is 960?

5. Anand borrowed a sum of Rs 6000 at the rate of 6 percent per annum. Find the amount to be paid by Anand at the end of 6 years?

6. Ramesh borrowed a certain sum from a financing company at 10.5 percent per annum. At the end of 4 years, Ramesh returned the sum along with the interest. He paid Rs 5680 in all. Find the sum borrowed by Ramesh initially?

7. At what rate% per annum a sum of money become double in 5 years?

8. In how many years will a sum of money becomes triple at 10% per annum simple interest?

9. A sum of money becomes double itself in 10 years. In how many years will it become 4 times at the same rate?

10. A certain sum amounts Rs 10400 in 3 years and 12800 in 6 years. Find the sum?

11. A part of sum of Rs 8000 is invested at 4% and remaining at 6% per annum. The whole annual received was Rs 380. Find the money invested at 4%?

Compound Interest

1. **When interest is compound Annually:**

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

2. **When interest is compounded Half-yearly:**

$$\text{Amount} = P\left[1 + \frac{(R/2)}{100}\right]^{2n}$$

3. **When interest is compounded Quarterly:**

$$\text{Amount} = P\left[1 + \frac{(R/4)}{100}\right]^{4n}$$

4. When interest is compounded Annually but time is in fraction, say $3\frac{2}{5}$ years.

$$\text{Amount} = P\left(1 + \frac{R}{100}\right)^{3} \times \left(1 + \frac{\frac{2}{5}R}{100}\right)$$

5. When Rates are different for different years, say R_1%, R_2%, R_3% for 1st, 2ndand 3rd year respectively.

$$\text{Then, Amount} = P\left(1 + \frac{R_1}{100}\right)\left(1 + \frac{R_2}{100}\right)\left(1 + \frac{R_3}{100}\right).$$

Compound Interest Questions

12. Find the compound interest on Rs 5000 for 2 years at 10% per annum.

13. A sum of Rs 2500 is lent at compound interest at 4% per one year. Find the CI.

14. Find the amount on Rs 7500 at 10% pa interest compounded annually for 2 years, 6 months.

15. What sum of money will amounts to Rs 12100 in two years at 10% compound interest?

16. At what time will the compound interest on Rs 4000 at 10% to be Rs 840?

17. Find the compound interest on Rs 10000 at 10 pa for 1 year six months, the interest being compounded half yearly?

18. Find the compound interest on 3000 at 30% per annum for one year, the interest being compounded in 4 months period.

19. Find the compound interest on 10000 at 20 percent pa for 9 months, the interest being compounded quarterly?

20. The difference between simple interest and compound interest on a sum of money for 2 years at 15% is Rs 495. Find the sum?