Simple Interest

Exercise-69

Solution 1:

1. Principal = Rs. 25000
   Interest = Rs. (32500 – 25000) = Rs. 7500
   Period = 3 years.
2. Principal = Rs. 8000
   Interest = Rs. (8480 – 8000) = Rs. 480 Period = 6 months.
3. Principal = Rs. 6,00,000
   Interest = Rs. (840000 – 600000) = Rs. 2,40,000
   Period = 5 years.

Exercise-70

Solution 1:

1. If a person borrows Rs. 100 from the Jijamata Co-operative Credit Society for one year, he must pay an interest of Rs. 12 to the Society at the end of the year.
2. If you borrow Rs. 100 from the Rajgad Sahakari Bank for one year, you must pay the bank Rs. 8 as interest at the end of the year.
3. If Sarjerao takes a loan of Rs. 100 for one year from the Zilla Central Bank, he must pay Rs. 10 to the bank as interest for the year.

Exercise-71

Solution 1:

1. Rate of interest = 8 p.c.p.a.
   This means the interest on Rs. 100 for 1 year is Rs. 8.
   ∴ The interest on Rs. 100 for 5 years will be 8 × 5 = Rs. 40.
2. Rate of interest = 12 p.c.p.a.
   This means the interest on Rs. 100 for 1 year is Rs. 12.
   ∴ The interest on Rs. 100 for 3 years will be 12 × 3 = Rs. 36.
3. Rate of interest = 5 p.c.p.a.
   This means the interest on Rs. 100 for 1 year is Rs. 5.
   ∴ The interest on Rs. 100 for 20 years will be 5 × 20 = Rs. 100.
4. Rate of interest = 9 p.c.p.a.
   This means the interest on Rs. 100 for 1 year is Rs. 9.
   ∴ The interest on Rs. 100 for 4 years will be 9 × 4 = Rs. 36.

5. Rate of interest = 7 p.c.p.a.
   This means the interest on Rs. 100 for 1 year is Rs. 7.
   ∴ The interest on the same principal for 2 years will be 7 × 2 = Rs. 14.
6. Rate of interest = 4 p.c.p.a.
   This means the interest on Rs. 100 for 1 year is Rs. 4.
   ∴ The interest on the same principal for 7 years will be 4 × 7 = Rs. 28.

Solution 2(1):
The principal remains the same but the period increases 5 times.
∴ The interest will also increase fivefold.
∴ Interest for 5 years = 720 × 5 = Rs. 3,600.

Solution 2(2):
The principal remains the same but the period increases 3 times. (2 years × 3 years = 6 years)
∴ The interest will also triple.
∴ Interest for 6 years = 3300 × 3 = Rs. 9,900.

Exercise-72

Solution 1:

1. Rate of interest = 10 p.c.p.a
   A year's interest on Rs. 100 is Rs. 10.
   Principal is Rs. 6000 i.e. 60 times Rs. 100.
   Period is the same.
   ∴ Interest = 60 times Rs 10.
   ∴ Interest = 10 × 60 = Rs. 600
2. Rate of interest = 14 p.c.p.a
   A year's interest on Rs. 100 is Rs. 14.
   Principal is Rs. 500 i.e. 5 times Rs. 100.
   Period is the same.
   ∴ Interest = 5 times Rs. 14.
   ∴ Interest = 14 × 5 = Rs. 70.
3. Rate of interest = 9 p.c.p.a
   A year's interest on Rs. 100 is Rs. 9.
   Principal is Rs. 15,000 i.e. 150 times Rs. 100.
   Period is the same.
   ∴ Interest = 150 times Rs. 9.
   ∴ Interest = 9 × 150 = Rs. 1350.
4. Rate of interest = 6 p.c.p.a
   A year's interest on Rs. 100 is Rs. 6.
   Principal is Rs. 12000 i.e. 120 times Rs. 100.
   Period is the same.

∴ Interest = 120 times Rs. 6.
∴ Interest = 6 × 120 = Rs. 720

5. Rate of interest = 3 p.c.p.a
   A year's interest on Rs. 100 is Rs. 3.
   Principal is Rs. 25000 i.e. 250 times Rs. 100.
   Period is the same.
   ∴ Interest = 250 times Rs. 3.
   ∴ Interest = 3 × 250 = Rs. 750.
6. Rate of interest = 11 p.c.p.a
   A year's interest on Rs. 100 is Rs 11.
   Principal is Rs. 8000 i.e. 80 times Rs. 100.
   Period is the same.
   ∴ Interest = 80 times Rs. 11.
   ∴ Interest = 11 × 80 = Rs. 880.

Solution 2(1):

The period and the rate of interest remain the same. The new principal Rs. 15000 is 3 times the old principal Rs. 5000.
∴ Interest also will be 3 times of Rs. 1200∴ Interest on Rs. 15000 = 1200 × 3 = Rs. 3600

Solution 2(2):

The period and the rate of interest remain the same.

The new principal Rs. 6000 is $\frac{1}{3}$ times the old principal Rs. 18000.

$\therefore$ Interest also will be $\frac{1}{3}$ times of Rs. 3240.

$\therefore$ Interest on Rs. $6000 = 3240 \times \frac{1}{3} =$ Rs. 1080.

Exercise-73

Solution 1:

1. Rate of interest is 6 p.c.p.a.∴ Interest on a principal of Rs. 100 for 1 year = Rs. 6
   ∴ Interest on a principal of Rs. 100 for 5 years = 6 × 5 = Rs. 30.
   Now, 400 is 4 times Rs. 100.∴ Interest on Rs. 400 for 5 years = Rs. 30 × 4 = Rs. 120.
2. Rate of interest is 4 p.c.p.a.∴ Interest on a principal of Rs. 100 for 1 year = Rs. 4
   ∴ Interest on a principal of Rs. 100 for 3 years = 4 × 3 = Rs. 12.
   Now, 1500 is 150 times Rs. 100.∴ Interest on Rs. 1500 for 3 years = Rs. 12 × 15 = Rs. 180.

3. Rate of interest is 8 p.c.p.a.∴ Interest on a principal of Rs. 100 for 1 year = Rs. 8
   ∴ Interest on a principal of Rs. 100 for 4 years = 8 × 4 = Rs. 32.
   Now, 15000 is 150 times Rs. 100.∴ Interest on Rs. 15000 for 4 years = Rs. 32 × 150 = Rs. 4800.
4. Rate of interest is 10 p.c.p.a.∴ Interest on a principal of Rs. 100 for 1 year = Rs. 10
   ∴ Interest on a principal of Rs. 100 for 2 years = 10 × 2 = Rs. 20.
   Now, 20000 is 200 times Rs. 100.∴ Interest on Rs. 20000 for 2 years = Rs. 20 × 200 = Rs. 4000.
5. Rate of interest is 5 p.c.p.a.∴ Interest on a principal of Rs. 100 for 1 year = Rs. 5
   ∴ Interest on a principal of Rs. 100 for 6 years = 5 × 6 = Rs. 30.
   Now, 3500 is 35 times Rs. 100.∴ Interest on Rs. 3500 for 6 years = Rs. 30 × 35 = Rs. 1050.