Exercise 8.3

2. Kamala borrowed Rs.26,400 from a Bank to buy a scooter at a rate of 15% p.a. compounded yearly. What amount will she pay at the end of 2 years and 4 months to clear the loan?

Solution: Here, Principal (P) = Rs. 26,400,
Time n = 2 years 4 months,
Rate of interest (R) = 15% p.a.

Amount for 2 years (A) = $P\left(1+\frac{R}{100}\right)^n$

$= 26400\left(1+\frac{15}{100}\right)^2$

$= 26400\left(1+\frac{3}{20}\right)^2$

$= 26400\left(\frac{23}{20}\right)^2$

$= 26400\times\frac{23}{20}\times\frac{23}{20}$

= Rs. 34,914

Interest for 4 months = $\frac{4}{12}=\frac{1}{3}$

years at the rate of 15% = $\frac{34914\times15\times1}{100}$

= Rs. 1745.70

$\therefore$ Total amount = Rs. 34,914 + Rs. 1,745.70

= Rs. 36,659.70 Answer

3. Fabina borrows Rs.12,500 per annum for 3 years at simple interest and Radhaborrows the same amount for the same time period at 10% per annnum, compounded annually. Who pays more interest and by how much?

Solution: Here, Principal (P) = Rs.12,500,
Time n = 3 years,
Rate of interest (R) = 12% p.a.

Simple Interest for Fabina = $\frac{P \times R \times T}{100}$

$= \frac{12500 \times 12 \times 3}{100}$

= Rs. 4,500

Amount for Radha, P = Rs. 12,500, R = 10% and n = 3 years

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

$= 12500\left(1+\frac{10}{100}\right)^3$

$= 12500\left(1+\frac{1}{10}\right)^3$

$= 12500\left(\frac{11}{10}\right)^3$

$= 12500 \times \frac{11}{10} \times \frac{11}{10} \times \frac{11}{10}$

= Rs. 16,637.50

∴ C.I. for Radha = A – P

= Rs. 16,637.50 – Rs. 12,500 = Rs. 4,137.50

Here, Fabina pays more interest

= Rs. 4,500.00 – Rs. 4,137.50 = Rs. 362.50 Answer

Do Your Self

4. I borrowsRs.12,000 from Jamshed at 6% per annum simple interest for 2 years. Had I borrowed this sum at 6% per annum compound interest, what extra amount would I have to pay?

5. Vasudevan invested Rs.60,000 at an interest rate of 12% per annum compounded half yearly. What amount would he get:
(i) after 6 months? (ii) after 1 year?

6. Arif took a loan of Rs.80,000 from a bank. If the rate of interest is 10% per annum, find the difference in amounts he would be paying after $1\frac{1}{2}$ years if the interest is:
(i) compounded annually. (ii) compounded half yearly.