Exercise 11A

Q1.

Answer :

Principal for the first year = Rs. 2500

Interest for the first year = Rs. $\left(\frac{2500\times10\times1}{100}\right)$ = Rs. 250

Amount at the end of the first year = Rs. $\left(2500+250\right)$ = Rs. 2750

Principal for the second year = Rs. 2750

Interest for the second year = Rs. $\left(\frac{2750\times10\times1}{100}\right)$ = Rs. 275

Amount at the end of the second year = Rs. $\left(2750+275\right)$ = Rs. 3025

$\therefore$ Compound interest = Rs. $(3025-2500)$ = Rs. 525

Q2.

Answer :

Principal for the first year = Rs. 15625

Interest for the first year = Rs. $\left(\frac{15625\times12\times1}{100}\right)$ = Rs. 1875

Amount at the end of the first year = Rs. $\left(15625+1875\right)$ = Rs. 17500

Principal for the second year = Rs. 17500

Interest for the second year = Rs. $\left(\frac{17500\times12\times1}{100}\right)$ = Rs. 2100

Amount at the end of the second year = Rs. $\left(17500+2100\right)$ = Rs. 19600

Principal for the third year = Rs. 19600

Interest for the third year = Rs. $\left(\frac{19600\times12\times1}{100}\right)$ = Rs. 2352

Amount at the end of the second year = Rs $\left(19600+2352\right)$ = Rs. 21952

$\therefore$ Compound interest = Rs. $(21952-15625)$ = Rs. 6327

Q3.

Answer :

Principal amount = Rs. 5000

Simple interest = Rs. $\left(\frac{5000\times2\times9}{100}\right)$ = Rs. 900

The compound interest can be calculated as follows :

Principal for the first year = Rs. 5000

Interest for the first year = Rs. $\left(\frac{5000\times9\times1}{100}\right)$ = Rs. 450

Amount at the end of the first year = Rs. $\left(5000+450\right)$ = Rs. 5450

Principal for the second year = Rs. 5450

Interest for the second year = Rs. $\left(\frac{5450\times9\times1}{100}\right)$ = Rs. 490.5

Amount at the end of the second year = Rs. $\left(5450+490.5\right)$ = Rs. 5940.5

$\therefore$ Compound interest = Rs. $(5940.5-5000)$ = Rs. 940.5

Now, difference between the simple interest and the compound interest = (CI − SI) = Rs. $(940.5-900)$ = Rs. 40.5

Q4.

Answer :

Principal for the first year = Rs. 25000

Interest for the first year = Rs. $\left(\frac{25000\times8\times1}{100}\right)$ = Rs. 2000

Amount at the end of the first year = Rs. $\left(25000+2000\right)$ = Rs. 27000

Principal for the second year = Rs. 27000

Interest for the second year = Rs. $\left(\frac{27000\times8\times1}{100}\right)$ = Rs. 2160

Amount at the end of the second year = Rs. $\left(27000+2160\right)$ = Rs. 29160

Therefore, Ratna has to pay Rs. 29160 after 2 years to discharge her debt.

Q5.

Answer :

Principal amount = Rs. 20000

Simple interest = Rs. $\left(\frac{20000\times2\times12}{100}\right)$ = Rs. 4800

The compound interest can be calculated as follows :

Principal for the first year = Rs. 20000

Interest for the first year = Rs. $\left(\frac{20000\times12\times1}{100}\right)$ = Rs. 2400

Now, amount at the end of the first year = Rs. $\left(20000+2400\right)$ = Rs. 22400

Principal for the second year = Rs. 22400

Interest for the second year = Rs. $\left(\frac{22400\times12\times1}{100}\right)$ = Rs. 2688

Now, amount at the end of the second year = Rs. $\left(22400+2688\right)$ = Rs. 25088

Hence, compound interest = Rs. $(25088-20000)$ = Rs. 5088

Now, CI − SI = Rs. $(5088-4800)$ = Rs. 288

$\therefore$ The amount of money Harpreet will gain after two years is Rs 288.

Q6.

Answer :

Principal for the first year = Rs. 64000

Interest for the first year = Rs. $\left(\frac{64000\times15\times1}{100\times2}\right)$ = Rs. 4800

Now, amount at the end of the first year = Rs. $\left(64000+4800\right)$ = Rs. 68800

Principal for the second year = Rs. 68800

Interest for the second year = Rs. $\left(\frac{68800\times15\times1}{100\times2}\right)$ = Rs. 5160

Now, amount at the end of the second year = Rs. $\left(68800+5160\right)$ = Rs. 73960

Principal for the third year = Rs. 73960

Interest for the third year = Rs. $\left(\frac{73960\times15\times1}{100\times2}\right)$ = Rs. 5547

Now, amount at the end of the third year = Rs. $\left(73960+5547\right)$ = Rs. 79507

$\therefore$ Manoj will get an amount of Rs. 79507 after 3 years.

Q7.

Answer :

Principal amount = Rs. 6250
Rate of interest = 8% per annum = 4% for half year
Time = 1 year = 2 half years
Principal for the first half year = Rs. 6250

Interest for the first half year = Rs. $\left(\frac{6250\times4\times1}{100}\right)$ = Rs. 250

Now, amount at the end of the first half year = Rs. $\left(6250+250\right)$ = Rs. 6500

Principal for the second half year = Rs. 6500

Interest for the second half year = Rs. $\left(\frac{6500\times4\times1}{100}\right)$ = Rs. 260

Now, amount at the end of the second half year = Rs $\left(6500+260\right)$ = Rs. 6760

$\therefore$ Compound interest = Rs $(6760-6250)$ = Rs 510
Hence, Divakaran gets a compound interest of Rs 510.

Q8.

Answer :

Principal amount = Rs. 16000
Rate of interest = 10% per annum = 5% for half year
Time = $1\frac{1}{2}$ years = 3 half years
Principal for the first half year = Rs. 16000

Interest for the first half year = Rs. $\left(\frac{16000\times5\times1}{100}\right)$ = Rs. 800

Now, amount at the end of the first half year = Rs. $\left(16000+800\right)$ = Rs. 16800

Principal for the second half year = Rs. 16800

Interest for the second half year = Rs. $\left(\frac{16800\times5\times1}{100}\right)$ = Rs. 840

Now, amount at the end of the second half year = Rs. $\left(16800+840\right)$ = Rs. 17640

Principal for the third half year = Rs. 17640

Interest for the third half year = Rs. $\left(\frac{17640\times5\times1}{100}\right)$ = Rs. 882

Now, amount at the end of the third half year = Rs. $\left(17640+882\right)$ = Rs. 18522

$\therefore$ The amount of money Michael has to pay the finance company after $1\frac{1}{2}$ years is Rs 18522.

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