Exercise 10B

Q22

Answer :

Let Akhil's income be Rs 100.
∴ Nikhil's income = Rs 80
Akhil's income when Nikhil's income is Rs 80 = Rs 100
Akhil's income when Nikhil's income is Rs 100 = Rs $\left(\frac{100}{80} \times 100\right)$ = Rs 125
i.e., if Nikhil's income is Rs.100, then Akhil's income is Rs 125.
Hence, Akhil's income is more than that of Nikhil's by 25%.

Q23

Answer :

Let Rs 100 be the income of Mr. Thomas.
∴ John's income = Rs 120
Mr. Thomas' income when John's income is Rs 120 = Rs 100
Mr. Thomas' income when John's income is Rs 100 = Rs $\left(\frac{100}{120} \times 100\right)$ = Rs $83\frac{1}{3}$
Hence, Mr Thomas' income is less than that of John's by $16\frac{2}{3}\%$.

Q21

Answer :

Let Rs x be the value of the machine one year ago.

Then, its present value = 90% of Rs x

$$= \text{Rs}\left(\frac{90}{100} \times x\right) = \text{Rs}\left(\frac{9x}{10}\right)$$

It is given that present value of the machine = Rs 387000

$\Rightarrow x = \text{Rs}\left(\frac{387000 \times 10}{9}\right) = \text{Rs}\ (43000 \times 10) = \text{Rs}\ 430000$

Hence, the value of the machine a year ago was Rs 430000.

Q25

Answer :

The present value of the car = Rs 450000
The decrease in its value after the first year = 20% of Rs 450000

$$= \text{Rs}\left(\frac{20}{100} \times 450000\right) = \text{Rs}\ 90000$$

The depreciated value of the car after the first year = Rs (450000 − 90000) = Rs 360000
The decrease in its value after the second year = 20% of Rs 360000

$$= \text{Rs}\left(\frac{20}{100} \times 360000\right) = \text{Rs}\ 72000$$

The depreciated value of the car after the second year = Rs (360000 − 72000) = Rs 288000

Hence, the value of the car after two years will be Rs 288000.

Q26

Answer :

Present population of the town = 60000

Increase in population of the town after the 1 year = 10% of 60000

$= \left(\frac{10}{100} \times 60000\right) = 6000$

Thus, population of the town after 1 year = 60000 + 6000 = 66000

Increase in population after 2 years = 10% of 66000

$= \left(\frac{10}{100} \times 66000\right) = 6600$

Thus, population after the second year = 66000 + 6600 = 72600

Hence, the population of the town after 2 years will be 72600.

Q27

Answer :

Let the consumption of sugar originally be 1 unit and let its cost be Rs 100

New cost of 1 unit of sugar = Rs 125

Now, Rs 125 yield 1 unit of sugar.

$\therefore$ Rs 100 will yield $\left(\frac{1}{125} \times 100\right)$ unit = $\left(\frac{4}{5}\right)$ unit of sugar.

Reduction in consumption = $\left(1 - \frac{4}{5}\right) = \left(\frac{1}{5}\right)$ unit

$\therefore$ Reduction percent in consumption = $\left(\frac{1}{5} \times \frac{1}{1} \times 100\right)$ %= $\left(\frac{100}{5}\right)$ %= 20%

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