Exercise 12B

Q1

Answer :

(a) Rs. 125

$\text{Principal } = \text{Rs. } 6250$

$\text{Simple Interest} = 4\% \text{ per annum}$

$\text{Time } = 6 \text{ months} = \frac{1}{2} \text{ years}$

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

$\text{Simple Interest} = \frac{6250 \times 4 \times 1}{100 \times 2}$

$\text{Simple Interest} = \frac{250}{2} = \text{Rs. } 125$

Q2

Answer :

(b) Rs.3500

$\text{Amount} = \text{Rs. } 3605$

$\text{Time} = \frac{219}{365} \text{ days} = \frac{219}{365} \text{ days}$

$\text{Rate} = 5\% \text{ per annum}$

$\text{Amount} = \text{Sum} + \frac{\text{Sum} \times \text{Rate} \times \text{Time}}{100}$

$\text{Amount} = \text{Sum} \left(1 + \frac{\text{Rate} \times \text{Time}}{100}\right)$

$\text{Sum} = \frac{3605}{1 + \frac{5}{100} \times \frac{219}{365}} = \frac{3605 \times 36500}{37595}$

$\text{Sum} = \text{Rs. } 3500$

Q3

Answer :

(c) 8%

Let the sum be Rs. x.
Rate of interest $= r\%$
Time$=2\frac{1}{2}$ years$=\frac{5}{2}$ years
Amount$=\frac{6}{5}\times$ Sum
Rate=?
Amount $=\frac{6}{5}\times$Sum
Principal + S.I. = Amount
Principal$+\frac{\text{Principal}\times\text{Rate}\times\text{Time}}{100}=\frac{6}{5}\times$Principal
$=>x+\frac{xr\times5}{100\times2}=\frac{6}{5}x$
$=>x\left(1+\frac{5r}{100\times2}\right)=\frac{6}{5}x$
$=>1+\frac{r}{40}=\frac{6}{5}$
$=>r=40\times\frac{1}{5}$
$=>r=8$
So, the rate of interest is 8%.

Q4

Answer :

(b) 9 months

4. (b)
Let the time be t years.
Principal = Rs. 8000
Amount = Rs. 8360
Rate $= 6\%$ per annum

$$\text{Amount} = \text{Principal}\left(1 + \frac{\text{Rate} \times \text{Time}}{100}\right)$$

$$\frac{8360}{8000} = 1 + \frac{6 \times t}{100}$$

$$\Rightarrow \frac{8360}{8000} - 1 = \frac{6t}{100}$$

$$\Rightarrow t = \left(\frac{8360 - 8000}{8000}\right) \times \frac{100}{6}$$

$$= \frac{360}{8000} \times \frac{100}{6}$$

$$= \frac{6}{8} \times 12 \text{ months}$$

$$= 9 \text{ months}$$

Q5

Answer :

(b) 10%

Let the sum be Rs. x and the rate be $r\%$.

A/Q:

$$\text{Amount} = 2x$$

$$\Rightarrow P + S.I. = 2x$$

$$\Rightarrow P + \frac{P \times R \times T}{100} = 2x$$

$$\Rightarrow x\left(1 + \frac{r \times 10}{100}\right) = 2x$$

$$\Rightarrow \frac{100 + 10r}{100} = 2$$

$$\Rightarrow 10r = 200 - 100$$

$$\Rightarrow 10r = 100$$

$$\Rightarrow r = \frac{100}{10}$$

$$\Rightarrow r = 10$$

Q6

Answer :

(c) Rs. $\left(\frac{100}{x}\right)$

$$\text{Simple Interest} = \text{Rs. } x$$
$$\text{Rate} = x\% \text{ per annum}$$
$$\text{Time} = x \text{ years}$$
$$\text{Simple Interest} = \frac{\text{Principal} \times \text{Rate} \times \text{Time}}{100}$$
$$\Rightarrow \cancel{x} = \frac{\text{Principal} \times \cancel{x} \times x}{100}$$
$$\Rightarrow \text{Principal} = \text{Rs. } \frac{100}{x}$$

Q7

Answer :

(b) 8%

$$\text{Time} = 5 \text{ years}$$
$$\text{Simple interest} = \frac{2}{5}\text{P}$$
$$\Rightarrow \frac{\text{P} \times \text{Rate} \times \text{Time}}{100} = \frac{2}{5}\text{P}$$
$$\Rightarrow \frac{\text{Rate} \times 5}{100} = \frac{2}{5}$$
$$\Rightarrow \textit{Rate} = \frac{2 \times 100}{5 \times 5}$$
$$\Rightarrow \text{Rate} = 8\%$$

Q8

Answer :

(c) 22 years

********** END **********