



Exercise 7B

Q29

Answer :

Let the two complementary angles be x° and $(90 - x)^\circ$.

According to the question, we have :

$$x - (90 - x) = 8$$

$$\Rightarrow x - 90 + x = 8$$

$$\Rightarrow 2x = 98$$

$$\Rightarrow x = 49$$

\therefore The measures of the complementary angles are 49° and $(90 - 49)^\circ = 41^\circ$.

Q30

Answer :

Let the two supplementary angles be x° and $(180 - x)^\circ$.

$$\therefore x - (180 - x) = 44$$

$$\Rightarrow x - 180 + x = 44$$

$$\Rightarrow 2x = 224$$

$$\Rightarrow x = 112$$

\therefore The measures of the supplementary angles are 112° and $(180 - 112)^\circ$, i.e., 68° .

Q31

Answer :

Let the base angles of the isosceles triangle be x° each.

Then, the measure the vertex angle will be $(2x)^\circ$.

According to the question, we have :

$$x + x + 2x = 180 \quad (\text{Sum of three sides of a triangle})$$

$$\Rightarrow 4x = 180$$

$$\Rightarrow x = \frac{180}{4}$$

$$\Rightarrow x = 45$$

\therefore Each base angle measures 45° and the vertex angle measures $(2 \times 45)^\circ$, i.e., 90° .

Q32

Answer :

Let the length of the total journey be x km.

According to the question, we have:

$$\frac{3}{5}x + \frac{1}{4}x + \frac{1}{8}x + 2 = x$$

$$\Rightarrow \frac{24x + 10x + 5x + 80}{40} = x$$

$$\Rightarrow 39x + 80 = 40x$$

$$\Rightarrow x = 80$$

\therefore The length of his total journey is 80 km.

Q33

Answer :

Let x be the number of days of his absence.

\therefore Number of days of his presence = $(20 - x)$

Now, $(20 - x)120 - 10x = 1880$

$$\Rightarrow 2400 - 120x - 10x = 1880$$

$$\Rightarrow 2400 - 1880 = 130x$$

$$\Rightarrow 130x = 520$$

$$\Rightarrow x = 4$$

\therefore Number of days of his absence = 4

Q34

Answer :

Let the worth of Hari Babu's property be Rs x .

According to the question, we have:

$$\text{Son's share} = \frac{1}{4}x$$

$$\text{Daughter's share} = \frac{1}{3}x$$

$$\text{Wife's share} = \left\{ x - \left(\frac{1}{4}x + \frac{1}{3}x \right) \right\}$$

It is given that his wife's share is Rs 18000.

$$\text{i.e., } x - \left(\frac{1}{4}x + \frac{1}{3}x \right) = 18000$$

$$\Rightarrow x - \left(\frac{1}{3}x + \frac{1}{4}x \right) = 18000$$

$$\Rightarrow x - \frac{7x}{12} = 18000$$

$$\Rightarrow \frac{5x}{12} = 18000$$

$$\Rightarrow x = \frac{+80000 \times 12}{5}$$

$$\Rightarrow x = 43200$$

\therefore Hari Babu's total property is worth Rs 43200.

Q35

Answer :

Let the volume of the pure alcohol be x ml.

Initial concentration = 15 %

So, initial amount of alcohol in the solution will be = $\frac{15}{100} \times 400 = 60$ ml

To make the strength of the solution 32%, we will keep the amount of water constant and add

On adding pure alcohol, the volume of the solution increases to $400 + x$.

According to the question, we have :

$$\frac{x+60}{400+x} = \frac{32}{100}$$

$$\Rightarrow 100x + 6000 = 12800 + 32x$$

$$\Rightarrow 100x - 32x = 12800 - 6000$$

$$\Rightarrow 68x = 6800$$

$$\Rightarrow x = 100$$

So, amount of pure alcohol to be added = 100 ml

***** END *****