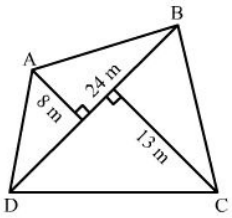
Mensuration-I area of a trapezium and a polygon Ex 20.1 Q10

Answer :



Given :
Diagonal of a quadrilateral shaped field $= 24$ m
Perpendiculars dropped on it from the remaining opposite vertices are 8 m and 13 m.
Now, we know :

$$\text{Area} = \frac{1}{2} \times d \times \left(h_1 + h_2\right)$$

$$\therefore \text{ Area of the field} = \frac{1}{2} \times 24 \times \left(8 + 13\right)$$

$$= 12 \times 21$$

$$= 252 \text{ m}^2$$

Mensuration-I area of a trapezium and a polygon Ex 20.1 Q11

Answer :

Given :
Side of the rhombus $= 6$ cm
Altitude $= 4$ cm
One of the diagonals $= 8$ cm

$$\text{Area of the rhombus} = \text{Side} \times \text{Altitude} = 6 \times 4 = 24 \text{ cm}^2 \quad \ldots\ldots\ldots \left(i\right)$$

We know : Area of rhombus $= \frac{1}{2} \times d_1 \times d_2$

Using $\left(i\right)$:

$$24 = \frac{1}{2} \times d_1 \times d_2$$

$$24 = \frac{1}{2} \times 8 \times d_2$$

$$d_2 = 6 \text{ cm}$$

Mensuration-I area of a trapezium and a polygon Ex 20.1 Q12

Answer :

Given :
The floor consist of 3000 rhombus shaped tiles.
The lengths of the diagonals of each tile are 45 cm and 30 cm.

$$\therefore \text{ Area of a rhombus shaped tile} = \frac{1}{2} \times \left(45 \times 30\right) = 675 \text{ cm}^2$$

$$\therefore \text{ Area of the complete floor} = 3000 \times 675 = 2025000 \text{ cm}^2$$

Now, we need to convert this area into m^2 because the rate of polishing is given as per m^2.

$$\therefore 2025000 \text{ cm}^2 = 2025000 \times \text{cm} \times \text{cm}$$

$$= 2025000 \times \frac{1}{100} \text{ m} \times \frac{1}{100} \text{ m}$$

$$= 202.5 \text{ m}^2$$

Now, the cost of polishing 1 m^2 is Rs 4.

$$\therefore \text{ Total cost of polishing the complete floor} = 202.5 \times 4 = 810$$

Thus, the total cost of polishing the floor is Rs 810.

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