



Mensuration-I area of a trapezium and a polygon Ex 20.1 Q19

Answer :

Given:

Area of the rhombus = 84 m^2

Perimeter = 40 m

Now, we know: Perimeter of the rhombus = $4 \times \text{Side}$

$\therefore 40 = 4 \times \text{Side}$

Side = $\frac{40}{4} = 10 \text{ m}$

Again, we know: Area of the rhombus = Side \times Altitude

$\Rightarrow 84 = 10 \times \text{Altitude}$

Altitude = $\frac{84}{10} = 8.4 \text{ m}$

Hence, the altitude of the rhombus is 8.4 m.

Mensuration-I area of a trapezium and a polygon Ex 20.1 Q20

Answer :

Given:

Side of the rhombus shaped garden = 30 m

Altitude = 16 m

Now, area of a rhombus = side \times altitude

\therefore Area of the given garden = $30 \times 16 = 480 \text{ m}^2$

Also, it is given that the rate of levelling the garden is Rs 2 per 1 m^2 .

\therefore Total cost of levelling the complete garden of area $480 \text{ m}^2 = 480 \times 2 = \text{Rs } 960$

Mensuration-I area of a trapezium and a polygon Ex 20.1 Q21

Answer :

Given:

Each side of a rhombus shaped field = 64 m

Altitude = 16 m

We know: Area of rhombus = Side \times Altitude

\therefore Area of the field = $64 \times 16 = 1024 \text{ m}^2$

Given: Area of the square field = Area of the rhombus

We know: Area of a square = $(\text{Side})^2$

$\therefore 1024 = (\text{Side})^2$

$\Rightarrow \text{Side} = \sqrt{1024} = 32 \text{ m}$

Thus, the side of the square field is 32 m.

Mensuration-I area of a trapezium and a polygon Ex 20.1 Q22

Answer :

Given:

Area of the rhombus = Area of the triangle with base 24.8 cm and altitude 16.5 cm

$$\text{Area of the triangle} = \frac{1}{2} \times \text{base} \times \text{altitude} = \frac{1}{2} \times 24.8 \times 16.5 = 204.6 \text{ cm}^2$$

$$\therefore \text{Area of the rhombus} = 204.6 \text{ cm}^2$$

Also, length of one of the diagonals of the rhombus = 22 cm

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

$$204.6 = \frac{1}{2} (22 \times d_2)$$

$$22 \times d_2 = 409.2$$

$$d_2 = \frac{409.2}{22} = 18.6 \text{ cm}$$

Hence, the length of the other diagonal of the rhombus is 18.6 cm.

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