Exercise 20D

Q1

Answer :

We know:

Area of a triangle = $\frac{1}{2} \times \mathbf{Base} \times \mathbf{Height}$

(i) Base = 42 cm

Height = 25 cm

$\therefore$ Area of the triangle = $\left(\frac{1}{2} \times 42 \times 25\right)$ cm^2 = 525 cm^2

(ii) Base = 16.8 m

Height = 75 cm = 0.75 m [since 100 cm = 1 m]

$\therefore$ Area of the triangle = $\left(\frac{1}{2} \times 16.8 \times 0.75\right)$ m^2 = 6.3 m^2

(iii) Base = 8 dm = (8 × 10) cm = 80 cm [since 1 dm = 10 cm]

Height = 35 cm

$\therefore$ Area of the triangle = $\left(\frac{1}{2} \times 80 \times 35\right)$ cm^2 = 1400 cm^2

Q2

Answer :

Height of a triangle = 2×AreaBase

Here, base = 16 cm and area = 72 cm^2

$\therefore$ Height = 2×7216 cm = 9 cm

Q3

Answer :

Height of a triangle = $\frac{2 \times \mathbf{Area}}{\mathbf{Base}}$

Here, base = 28 m and area = 224 m^2

$\therefore$ Height = $\left(\frac{2\times224}{28}\right)$ m = 16 m

Q4

Answer :

Base of a triangle = $\frac{2\times\text{Area}}{\text{Height}}$

Here, height = 12 cm and area = 90 cm^2

$\therefore$ Base = $\left(\frac{2\times90}{12}\right)$ cm = 15 cm

Q5

Answer :

Total cost of cultivating the field = Rs. 14580

Rate of cultivating the field = Rs. 1080 per hectare

Area of the field = $\left(\frac{\text{Total cost}}{\text{Rate per hectare}}\right)$ hectare

= $\left(\frac{14580}{1080}\right)$ hectare

= 13.5 hectare

= (13.5 × 10000) m^2 = 135000 m^2 [since 1 hectare = 10000 m^2]

Let the height of the field be *x* m.

Let the height of the field be x m.

Then, its base will be $3x$ m.

Area of the field = $\left(\frac{1}{2} \times 3x \times x\right)$ m^2 = $\left(\frac{3x^2}{2}\right)$ m^2

$\therefore \left(\frac{3x^2}{2}\right) = 135000$

$\Rightarrow x^2 = \left(135000 \times \frac{2}{3}\right) = 90000$

$\Rightarrow x = \sqrt{90000} = 300$

$\therefore$ Base = (3 $\times$ 300) = 900 m

Height = 300 m

Q6

Answer :

Let the length of the other leg be h cm.

Then, area of the triangle = $\left(\frac{1}{2} \times 14.8 \times h\right)$ cm^2 = (7.4 h) cm^2

But it is given that the area of the triangle is 129.5 cm^2.

$\therefore 7.4h = 129.5$

$\Rightarrow h = \left(\frac{129.5}{7.4}\right) = 17.5$ cm

$\therefore$ Length of the other leg = 17.5 cm

Q7

Answer :

Here, base = 1.2 m and hypotenuse = 3.7 m

In the right angled triangle:

Perpendicular = $\sqrt{(\mathrm{Hypotenuse})^2 - (\mathrm{Base})^2}$

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