Question 13:
Let each side of the equilateral triangle be a cm

$$\therefore \quad \text{area of equilateral triangle} = \frac{\sqrt{3}}{4}a^2$$

$$\frac{\sqrt{3}}{4}a^2 = 81\sqrt{3} \Rightarrow a^2\left(\frac{81\sqrt{3} \times 4}{\sqrt{3}}\right) = 324$$

$$\Rightarrow a = \sqrt{324}\,\text{cm} = 18\,\text{cm}$$

Height of equilateral triangle

$$= \left(\frac{\sqrt{3}}{2}a\right) = \left(\frac{\sqrt{3}}{2} \times 18\right)\text{cm} = 9\sqrt{3}\ \text{cm}$$

Question 14:
Base of right angled triangle = 48 cm
Height of the right angled triangle =
$$\sqrt{(\text{hypotenuse})^2 - (\text{base})^2}$$

$$\text{height} = \sqrt{(50)^2 - (48)^2}\ \text{cm}$$
$$= \sqrt{2500 - 2304}\,\text{cm}$$
$$= \sqrt{196}\ \text{cm} = 14\ \text{cm}$$

$$\text{Area of triangle} = \left(\frac{1}{2} \times \text{Base} \times \text{Height}\right)\text{cm}^2$$
$$= \left(\frac{1}{2} \times 48 \times 14\right)\text{cm}^2 = 336\ \text{cm}^2$$

Question 15:
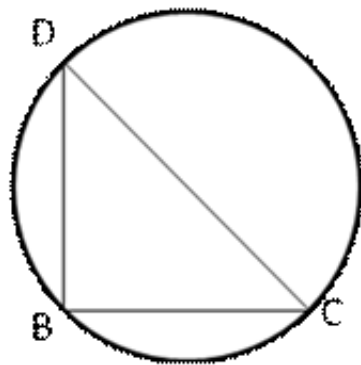Let the hypotenuse of right angle triangle = 6.5 m
Base = 6 cm

$$\text{Perpendicular} = \sqrt{(\text{Hypotenuse})^2 - (\text{base})^2}$$

$$= \sqrt{(6.5)^2 - (6)^2} \text{ cm}$$

$$= \sqrt{42.25 - 36} \text{ cm} = \sqrt{6.25} \text{ cm}$$

$$= 2.5 \text{ cm}$$

$$\text{Area of triangle} = \left(\frac{1}{2} \times \text{base} \times \text{height}\right)$$

$$= \left(\frac{1}{2} \times 6 \times 2.5\right) \text{cm}^2 = 7.5 \text{ cm}^2$$

Hence, perpendicular = 2.5 cm and area of the triangle = 7.5 cm^2

Question 16:
The circumcentre of a right triangle is the midpoint of the hypotenuse

Hypotenuse = 2 ×(radius of circumcircle)
= (2 × 8) cm = 16 cm
Base = 16 cm, height = 6 cm
Area of right angled triangle

$$= \left(\frac{1}{2} \times \text{base} \times \text{height}\right)$$

$$= \left(\frac{1}{2} \times 16 \times 6\right) \text{cm} = 48 \text{ cm}^2$$

Hence, area of the triangle= 48 cm^2

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