

Exercise 7A

Question 12:

Let a be the length of a side of an equilateral triangle.

∴ Area of an equilateral triangle =
$$\frac{\sqrt{3} \times a^2}{4}$$
 sq units

Area of the equilateral triangle = $36\sqrt{3}$ cm² [given]

$$\Rightarrow \frac{\sqrt{3} \times a^2}{4} = 36 \times \sqrt{3}$$

$$\Rightarrow a^2 = \frac{36 \times \sqrt{3} \times 4}{\sqrt{3}}$$

$$\Rightarrow a^2 = 36 \times 4 = 144$$

$$\Rightarrow a = \sqrt{144} = 12 \text{ cm}$$

Perimeter of an equilateral triangle = 3x a

Since, a = 12 cm,

Perimeter = (3×12) cm = 36cm

Question 13:

Let a be the length of the side of an equilateral triangle

:. Area of an equilateral triangle =
$$\frac{\sqrt{3}}{4}$$
 a² sq units

Area of the equilateral triangle = $81\sqrt{3}$ cm² [given]

$$\Rightarrow 81\sqrt{3} \text{ cm}^2 = \frac{\sqrt{3}}{4} \text{ a}^2$$

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

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

Height of an equilateral triangle = $\frac{\sqrt{3}}{2}$ a

Since a = 18 cm,

Height of the equilateral triangle $=\frac{\sqrt{3}}{2} \times 18 = 9\sqrt{3}$ cm.

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