Exercise 7A

Question 12:

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

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

Area of the equilateral triangle $= 36\sqrt{3}$ cm$^2$   [given]

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

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

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

$\therefore \qquad a = \sqrt{144} = 12$ cm

Perimeter of an equilateral triangle $= 3 \times a$

Since, $a = 12$ cm,

Perimeter $= (3 \times 12)$ cm $= 36$ cm

Question 13:

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

$\therefore$ Area of an equilateral triangle $= \dfrac{\sqrt{3}}{4} a^2$ sq units

Area of the equilateral triangle $= 81\sqrt{3}$ cm$^2$   [given]

$\Rightarrow \qquad 81\sqrt{3}$ cm$^2 = \dfrac{\sqrt{3}}{4} a^2$

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

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

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

Since $a = 18$ cm,

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

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