

Mathematics

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(Chapter – 12) (Heron's Formula)(Exemplar Problems)

(Class – IX)

Exercise 12.1

Question 6:

If the area of an equilateral triangle is $16\sqrt{3}$ cm², then the perimeter of the triangle is

- (A) 48 cm (B) 24 cm (C) 12 cm (D) 36 cm

Answer 6:

- (B) 24 cm

Solution:

Given, area of an equilateral triangle is $16\sqrt{3}$ cm²

∴ Area of an equilateral triangle is $\frac{\sqrt{3}}{4}(\text{Side})^2$

$$\Rightarrow \frac{\sqrt{3}}{4}(\text{Side})^2 = 16\sqrt{3}$$

$$\Rightarrow (\text{Side})^2 = 64$$

$$\therefore \text{Side} = 8\text{cm}$$

[taking positive square root because side is always positive]

$$\therefore \text{Perimeter of an equilateral triangle} = 3 \times \text{side} = 3 \times 8 = 24\text{cm}$$

Hence, the Perimeter of an equilateral triangle is 24cm.

