



Exercise 4D

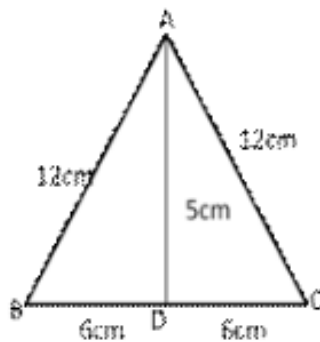
Question 13:

$\triangle ABC$ is an equilateral triangle in which all side are equal.

Therefore, $AB = BC = AC = 12 \text{ cm}$

If $BC = 12 \text{ cm}$

Then, $BD = DC = 6 \text{ cm}$



In $\triangle ADB$,

$$AB^2 = AD^2 + BD^2$$

(By applying pythagoras theorem)

$$AD^2 = AB^2 - BD^2$$

$$AD^2 = [(12)^2 - (6)^2] \text{ cm}^2$$

$$AD^2 = \sqrt{108} \text{ cm}$$

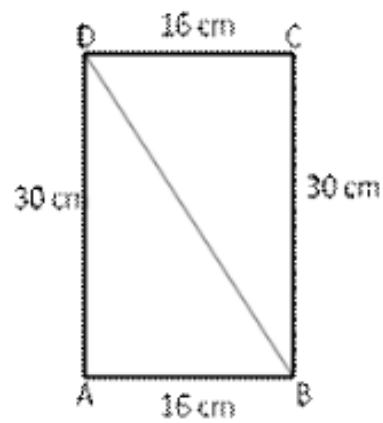
$$AD = \sqrt{108} \text{ cm} = 6\sqrt{3} \text{ cm}$$

Hence the height of the triangle is $6\sqrt{3} \text{ cm}$.

Question 14:

Let ABCD is the given rectangle, let BD is a diagonal making a $\triangle ADB$.

$$\Rightarrow \angle BAD = 90^\circ$$



Using Pythagoras theorem:

$$(DB)^2 = AB^2 + AD^2$$

$$DB^2 = (16^2 + 30^2) \text{ cm}^2$$

$$\begin{aligned} DB &= \sqrt{16^2 + 30^2} \text{ cm} \\ &= \sqrt{256 + 900} \\ &= 34 \text{ cm} \end{aligned}$$

Hence, length of diagonal DB is 34 cm.

***** END *****