# CHAPTER - 3
# Constructions

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## 1 3.2 Triangle

3.2.8 Draw a triangle $ABC$ in which $AB = 5cm$, $BC = 6cm$ and $\angle ABC = 60°$.

**Solution:**

| Variable | Description | Value |
|---|---|---|
| **a** | Length of $BC$ | $6cm$ |
| **b** | Length of $AC$ | ? |
| **c** | Length of $AB$ | $5cm$ |
| $\angle ABC$ | Angle $B$ | $60°$ |

TABLE 0

Let $\mathbf{k} = \mathbf{b} + \mathbf{c}$,
Using cosine rule, we can find the length of $AC$, i.e., **b**:

$$b^2 = a^2 + c^2 - 2ac\cos B \tag{1}$$

(2)

On solving, we get **b** as:

$$\mathbf{b} = \sqrt{31}cm \tag{3}$$

Therefore, we get:

$$\mathbf{k} = \sqrt{31} + 5cm \tag{4}$$

| Variable | Description | Value |
|---|---|---|
| **a** | Length of $BC$ | $6cm$ |
| **b** | Length of $AC$ | $\sqrt{31}cm$ |
| **c** | Length of $AB$ | $5cm$ |
| **k** | $\mathbf{b} + \mathbf{c}$ | $\sqrt{31} + 5cm$ |
| $\angle ABC$ | Angle $B$ | $60°$ |

TABLE 0

From the above table, we get the following triangle:

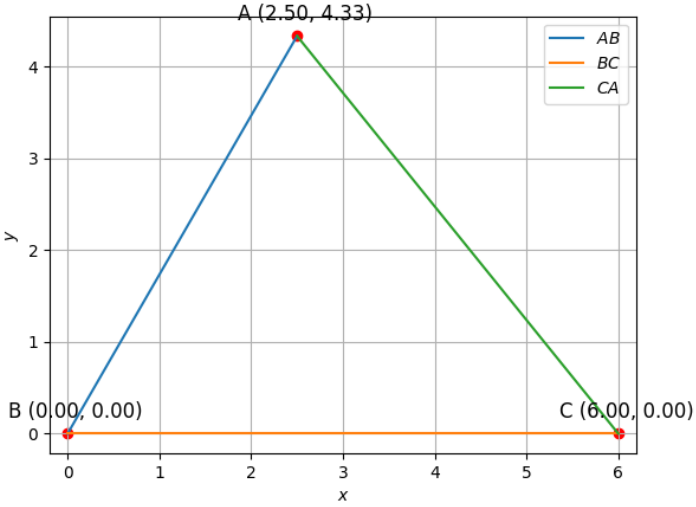


Fig. 0.1