

Assignment 1

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Download all python codes from

[https://github.com/balumurisandhyarani550/
Assignment1/blob/main/assignment1.py](https://github.com/balumurisandhyarani550/Assignment1/blob/main/assignment1.py)

and latex-tikz codes from

[https://github.com/balumurisandhyarani550/
Assignment1/blob/main/main.tex](https://github.com/balumurisandhyarani550/Assignment1/blob/main/main.tex)

1 QUESTION No.2.4

Draw $\triangle ABC$, $a = 6, c = 5$ and $\angle B = 60^\circ$.

2 SOLUTION

The vertex **A** can be expressed in *polar coordinate form* as

$$\mathbf{A} = c \begin{pmatrix} \cos \theta \\ \sin \theta \end{pmatrix}, \mathbf{B} = \begin{pmatrix} 0 \\ 0 \end{pmatrix}, \mathbf{C} = \begin{pmatrix} a \\ 0 \end{pmatrix}, \quad (2.0.1)$$

So, the vertices of $\triangle ABC$ are

$$\mathbf{A} = 5 \begin{pmatrix} \cos 60 \\ \sin 60 \end{pmatrix} = \begin{pmatrix} 2.5 \\ 2.5\sqrt{3} \end{pmatrix}, \mathbf{B} = \begin{pmatrix} 0 \\ 0 \end{pmatrix}, \mathbf{C} = \begin{pmatrix} 6 \\ 0 \end{pmatrix} \quad (2.0.2)$$

Plot of the $\triangle ABC$:

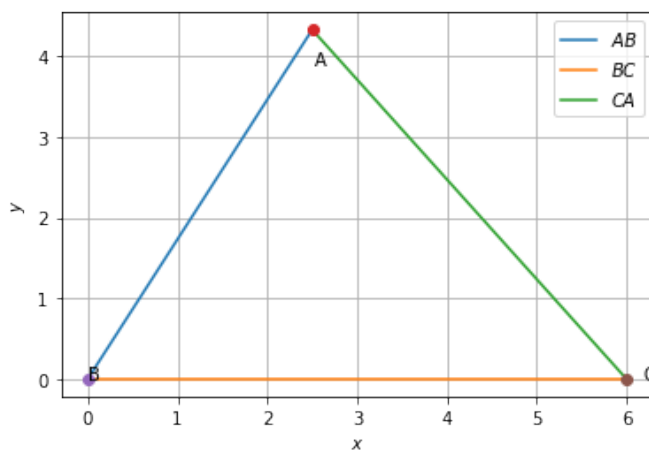


Fig. 2.1: $\triangle ABC$