

ASSIGNMENT-1

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download all python codes from

https://github.com/Kumarbegnier/IIT-HYD-INTERNSHIP/tree/main/ASSIGNMENT_201/code

latex-tikz codes from

https://github.com/Kumarbegnier/IIT-HYD-INTERNSHIP/blob/main/ASSIGNMENT_201/Latex.tex

written as,

$$y = z \left(\frac{\sin Y}{\sin Z} \right) = 6 \left(\frac{\sin 100^\circ}{\sin 50^\circ} \right) = 7.7134 \quad (2.0.4)$$

The vertex of Y can be expressed in polar coordinate.

$$\mathbf{X} = \begin{pmatrix} 0 \\ 0 \end{pmatrix}, \mathbf{Y} = 6 \begin{pmatrix} \cos 30^\circ \\ \sin 30^\circ \end{pmatrix}, \mathbf{Z} = \begin{pmatrix} 7.7134 \\ 0 \end{pmatrix} \quad (2.0.5)$$

The values of X, Y and Z are substituted and the triangle is plotted as given above.

1 QUESTION NO-2.19

If $XY = 6, \angle X = 30^\circ$ and $\angle Y = 100^\circ$. Can you draw a triangle?

2 SOLUTION

Angle Sum Property

$$\angle Z^\circ = 180^\circ - \angle X^\circ + \angle Y^\circ \quad (2.0.1)$$

$$\angle Z^\circ = 50^\circ \quad (2.0.2)$$

To find the side y by using the formula

$$\frac{\sin X}{x} = \frac{\sin Y}{y} = \frac{\sin Z}{z} \quad (2.0.3)$$

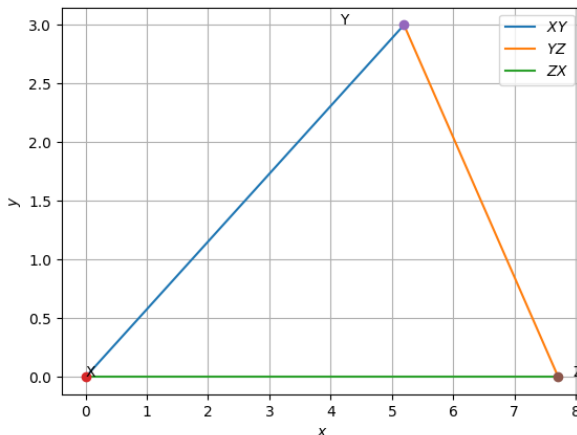


Fig. 0: Constructed Triangle