Assignment 1

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Download all python codes from

https://github.com/Gayathri1729/Assignment1

and latex-tikz codes from

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1 CONSTR-2.27 PART2

Construct $\triangle PQR$ with: $\angle$ Q = 30°,$\angle$R = 60° and QR=4.7.

2 SOLUTION

Note that $\angle$P= 180-($\angle$ Q+$\angle$ R)=90°
That is,the $\triangle PQR$ is a right angled triangle. Therefore,by Pythagoras Theorem ,the sides of the triangle can be obtained by

$$PQ = QR \cdot \cos 30 \tag{2.0.1}$$

$$PR = QR \cdot \cos 60 \tag{2.0.2}$$

Let PQ=q and PR=r.Then the vertices of the triangle are $\mathbf{P} = \begin{pmatrix} 0 \\ 0 \end{pmatrix}$,$\mathbf{Q} = \begin{pmatrix} 0 \\ q \end{pmatrix}$,$\mathbf{R} = \begin{pmatrix} r \\ 0 \end{pmatrix}$.
Knowing all the vertices ,now we can construct the triangle.

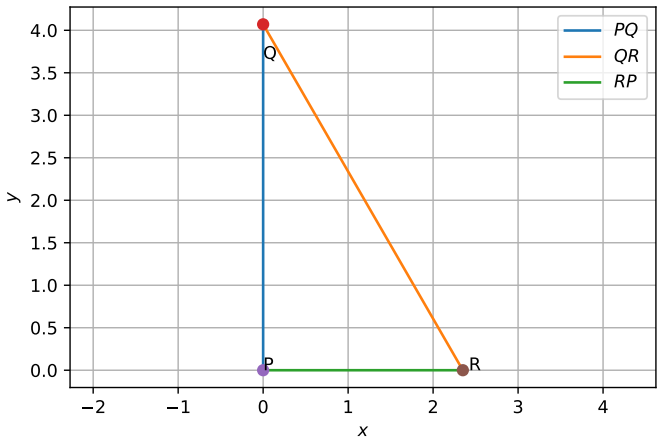

Fig. 0: $\triangle PQR$ constructed using python