Assignment 1

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Download all python codes from

https://github.com/ka−raja−babu/Matrix−Theory/Codes

and latex-tikz codes from

https://github.com/ka−raja−babu/Matrix−Theory

1 Question No. 24

Construct $\triangle PQR$ right angled at Q such that $QR = 8$ and $PR = 10$.

2 Explanation

Using Pythagoras Theorem,side PQ is calculated as :

$$PQ = \sqrt{PR^2 - QR^2} = \sqrt{10^2 - 8^2} = \sqrt{36} = 6 \tag{2.0.1}$$

So,the vertices of $\triangle PQR$ are

$$\mathbf{P} = \begin{pmatrix} 0 \\ PQ \end{pmatrix} = \begin{pmatrix} 0 \\ 6 \end{pmatrix}, \mathbf{Q} = \begin{pmatrix} 0 \\ 0 \end{pmatrix}, \mathbf{R} = \begin{pmatrix} QR \\ 0 \end{pmatrix} = \begin{pmatrix} 8 \\ 0 \end{pmatrix} \tag{2.0.2}$$

Lines PQ ,QR and RP are then generated and plotted using these coordinates to form $\triangle PQR$

Plot of the right angled $\triangle PQR$: