AI25BTECH11034 - SUJAL CHAUHAN
2.7.6

question
find the area of triangle with vertices (2,0), (1,4), (4,5)

Points	Vector
$\mathbf{A}$	$\begin{pmatrix}2\\0\end{pmatrix}$
$\mathbf{B}$	$\begin{pmatrix}4\\5\end{pmatrix}$
$\mathbf{C}$	$\begin{pmatrix}1\\4\end{pmatrix}$

$$\mathbf{A}-\mathbf{B}=\begin{pmatrix}-2\\-5\end{pmatrix} \tag{1}$$

$$\mathbf{A}-\mathbf{C}=\begin{pmatrix}1\\-4\end{pmatrix} \tag{2}$$

Area of triangle formed by the given points

$$\frac{1}{2}\left\|(\mathbf{A}-\mathbf{B})\times(\mathbf{A}-\mathbf{C})\right\|=\frac{13}{2} \tag{3}$$

Area of formed by the given points is $\frac{13}{2}$ square units.

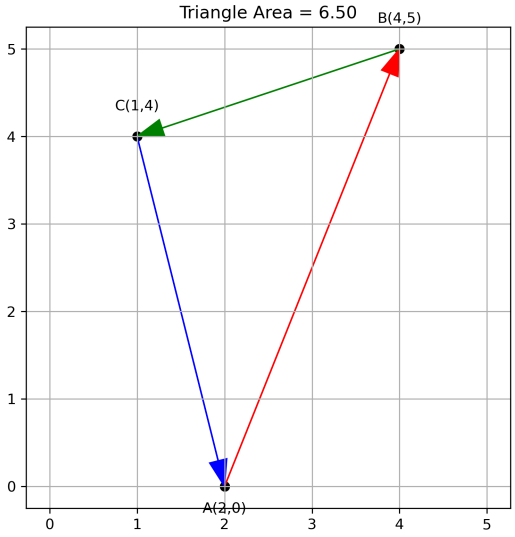

Figure 1: Caption