1.1.2.13

AI24BTECH11020 - RISHIKA KOTHA

question The fourth vertex **D** of a parallelogram ABCD whose three vertices are $\mathbf{A}(-2,3), \mathbf{B}(6,7)$ and $\mathbf{C}(8,3)$ is

solution

Vertices	Values
A	$(2,3)$
B	$(6,7)$
C	$(8,3)$

TABLE 0: Vertices

To find the vertex D of a parallelogram: we know that, in a parallelogram,

$$D = A + C - B \tag{0.1}$$

$$D = \begin{pmatrix} -2+8-6 \\ 3+3-6 \end{pmatrix} \tag{0.2}$$

$$D = \begin{pmatrix} 0 \\ -1 \end{pmatrix} \tag{0.3}$$

$$\tag{0.4}$$

therefore,the coordinates of the fourth vertex D are $\begin{pmatrix} 0 \\ -1 \end{pmatrix}$

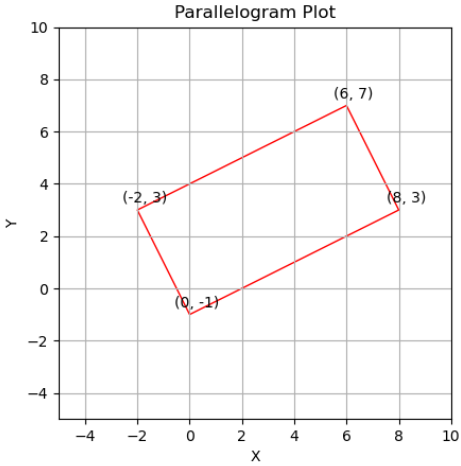

Fig. 0.1: parallelogram graph