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:

we know that, in a parallelogram,

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

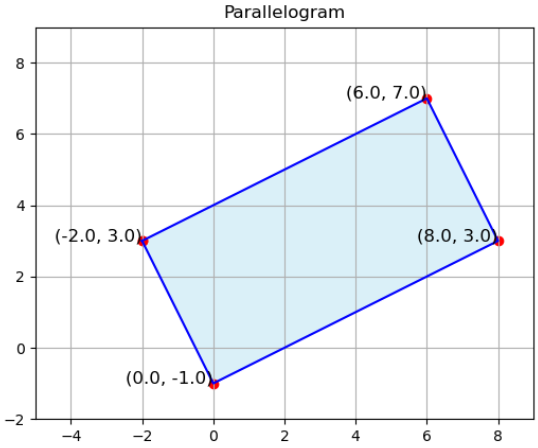
$$\implies D = A + C - B \tag{0.2}$$

$$= \begin{pmatrix} -2+8-6 \\ 3+3-7 \end{pmatrix} \tag{0.3}$$

$$\therefore D = \begin{pmatrix} 0 \\ -1 \end{pmatrix} \tag{0.4}$$

Parameter	value
A	$\begin{pmatrix} -2 \\ 3 \end{pmatrix}$
B	$\begin{pmatrix} 6 \\ 7 \end{pmatrix}$
C	$\begin{pmatrix} 8 \\ 3 \end{pmatrix}$
D	$\begin{pmatrix} 0 \\ -1 \end{pmatrix}$

TABLE 0: Vertices


Parallelogram
(6.0, 7.0)
(-2.0, 3.0)
(8.0, 3.0)
(0.0, -1.0)
8
6
4
2
0
−2
−4
−2
0
2
4
6
8