

1-1.3-2

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Question:

The coordinates of the three consecutive vertices of a parallelogram $ABCD$ are $A(1,3)$, $B(-1,2)$, and $C(2,5)$. Find the coordinates of the fourth vertex D . (10,2021)

Sol:

Label	Coordinate
A	$(1,3)$
B	$(-1,2)$
C	$(2,5)$
D	(x,y)

TABLE 0: Variables Used

In a parallelogram,

$$A - B = D - C \quad (0.1)$$

$$\begin{pmatrix} 2 \\ 1 \end{pmatrix} = \begin{pmatrix} x - 2 \\ y - 5 \end{pmatrix} \quad (0.2)$$

$$x = 4, y = 6 \quad (0.3)$$

$$D = \begin{pmatrix} 4 \\ 6 \end{pmatrix} \quad (0.4)$$

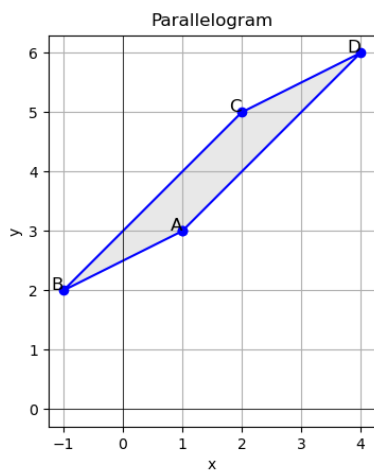


Fig. 0.1: parallelogram ABCD