# 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,

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

TABLE 0: Vertices

$$A + C = B + D \tag{0.1}$$
$$\implies D = A + C - B \tag{0.2}$$
$$\implies D = \begin{pmatrix} -2+8-6 \\ 3+3-7 \end{pmatrix} \tag{0.3}$$
$$\therefore D = \begin{pmatrix} 0 \\ -1 \end{pmatrix} \tag{0.4}$$