Question:

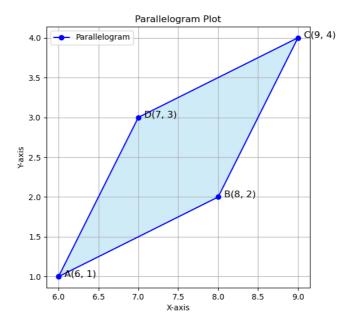
If the points $\mathbf{A}(6,1)$, $\mathbf{B}(8,2)$, $\mathbf{C}(9,4)$, $\mathbf{D}(p,3)$ are the vertices of a parellelogram, taken in order, find the value of p.

Solution:

Given the points are the vertices of a parllelogram.

If ABCD is a parellelogram with AB||CD,

$$\binom{8}{2} - \binom{6}{1} = \binom{9}{4} - \binom{p}{3}$$
$$\binom{2}{1} = \binom{9 - p}{1}$$
$$9-p=2$$
$$p=7$$



1