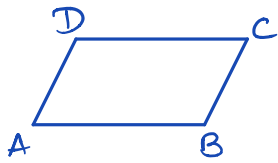


## Ex 2.8

ABCD est un // - gramme  $\Leftrightarrow \vec{AB} = \vec{DC}$



$$\Leftrightarrow \begin{pmatrix} 7 - (-2) \\ 0 - (-1) \end{pmatrix} = \begin{pmatrix} 1 - d_1 \\ 5 - d_2 \end{pmatrix} \quad \text{avec } \mathcal{D}(d_1, d_2)$$

$$\Leftrightarrow \begin{pmatrix} 9 \\ 1 \end{pmatrix} = \begin{pmatrix} 1 - d_1 \\ 5 - d_2 \end{pmatrix}$$

$$\Leftrightarrow \begin{cases} 9 = 1 - d_1 \Leftrightarrow d_1 = -8 \\ 1 = 5 - d_2 \Leftrightarrow d_2 = 4 \end{cases} \Rightarrow \underline{\underline{\mathcal{D}(-8; 4)}}$$

variante:  $\vec{OD} = \vec{OC} + \vec{CD} = \vec{OC} - \vec{DC} = \begin{pmatrix} 1 \\ 5 \end{pmatrix} - \begin{pmatrix} 9 \\ 1 \end{pmatrix} = \begin{pmatrix} -8 \\ 4 \end{pmatrix}$

$$\text{Aire} = \left| \det(\vec{AB}; \vec{BC}) \right| \quad \vec{BC} = \begin{pmatrix} 1 - 7 \\ 5 - 0 \end{pmatrix} = \begin{pmatrix} -6 \\ 5 \end{pmatrix}$$

$$= \left| \begin{vmatrix} 9 & -6 \\ 1 & 5 \end{vmatrix} \right| = |9 \cdot 5 - 1 \cdot (-6)| = |45 + 6| = |51| = \underline{\underline{51 \text{ u}^2}}$$

## Ex 2.9

$$\vec{AB} = \begin{pmatrix} 12 - 6 \\ -2 - 4 \end{pmatrix} = \begin{pmatrix} 6 \\ -6 \end{pmatrix} \quad \vec{AC} = \begin{pmatrix} 11 \\ 5 \end{pmatrix} \quad \vec{BC} = \begin{pmatrix} 5 \\ 11 \end{pmatrix}$$

$$\|\vec{AB}\| = \sqrt{6^2 + (-6)^2} = \sqrt{72} = \sqrt{36 \cdot 2} = 6\sqrt{2}$$

$$\|\vec{AC}\| = \sqrt{11^2 + 5^2} = \underline{\underline{\sqrt{146}}}$$

$$\|\vec{BC}\| = \sqrt{5^2 + 11^2} = \underline{\underline{\sqrt{146}}}$$

$\Rightarrow$  c'est un triangle isocèle

$$\det(\vec{AB}; \vec{AC}) = \begin{vmatrix} 6 & 11 \\ -6 & 5 \end{vmatrix} = 6 \cdot 5 - (-6) \cdot 11 = 30 + 66 = 96$$

$$\Rightarrow \text{Aire} = \frac{|96|}{2} = \underline{\underline{48 \text{ u}^2}}$$