Zadatak 9. Točke $A(-2,1)$, $B(3,0)$, $C(2,5)$, $D(-3,6)$ su vrhovi romba. Dokaži!

Rješenje.

$$\overrightarrow{AB} = \overrightarrow{DC} \quad (1)$$

$$\overrightarrow{AD} = \overrightarrow{BC} \quad (2),$$

$$|\overrightarrow{AB}| = |\overrightarrow{DC}| = |\overrightarrow{AD}| = |\overrightarrow{BC}| \quad (3)$$

$$(1)\begin{cases} \overrightarrow{AB} = (3+2)\vec{\imath} + (0-1)\vec{\jmath} = 5\vec{\imath} - \vec{\jmath} \\ \overrightarrow{DC} = (2+3)\vec{\imath} + (5-6)\vec{\jmath} = 5\vec{\imath} - \vec{\jmath} \end{cases}$$

$$(2)\begin{cases} \overrightarrow{AD} = (-3+2)\vec{\imath} + (6-1)\vec{\jmath} = -\vec{\imath} + 5\vec{\jmath} \\ \overrightarrow{BC} = (2-3)\vec{\imath} + (5-0)\vec{\jmath} = -\vec{\imath} + 5\vec{\jmath} \end{cases}$$

$$(3)\begin{cases} |\overrightarrow{AB}| = \sqrt{5^2 + (-1)^2} = \sqrt{26} = |\overrightarrow{DC}| \\ |\overrightarrow{AD}| = \sqrt{(-1)^2 + 5^2} = \sqrt{26} = |\overrightarrow{BC}| \end{cases}$$