

$$\begin{aligned}
 \mathbf{1.13} \quad AB &= \begin{pmatrix} \alpha & \beta \\ -\beta & \alpha \end{pmatrix} \begin{pmatrix} \gamma & \delta \\ -\delta & \gamma \end{pmatrix} = \begin{pmatrix} \alpha\gamma - \beta\delta & \alpha\delta + \beta\gamma \\ -\beta\gamma - \alpha\delta & -\beta\delta + \alpha\gamma \end{pmatrix} \\
 BA &= \begin{pmatrix} \gamma & \delta \\ -\delta & \gamma \end{pmatrix} \begin{pmatrix} \alpha & \beta \\ -\beta & \alpha \end{pmatrix} = \begin{pmatrix} \alpha\gamma - \beta\delta & \beta\gamma + \alpha\delta \\ -\alpha\delta - \beta\gamma & -\beta\delta + \alpha\gamma \end{pmatrix} = \begin{pmatrix} \alpha\gamma - \beta\delta & \alpha\delta + \beta\gamma \\ -\beta\gamma - \alpha\delta & -\beta\delta + \alpha\gamma \end{pmatrix}
 \end{aligned}$$

On constate ainsi l'égalité  $AB = BA$ .