$$\begin{cases} {}^{n}\mathbb{C}^{\complement}_{\mathbb{R}^n} \\ {}^{n}\mathbb{H}^{\complement}_{\mathbb{C}^n} \end{cases} = \begin{cases} \int_{\mathbb{R}} \in {}^{n}\mathbb{C}^{\complement}_{\mathbb{R}^n} & \int_{\mathbb{R}} \begin{array}{c|c} 0 & 1 \\ \hline 1 & 0 \end{array} \overset{*}{\int}_{\mathbb{R}} = \begin{array}{c|c} 0 & 1 \\ \hline 1 & 0 \end{array} \\ \int_{\mathbb{C}} \in {}^{n}\mathbb{H}^{\complement}_{\mathbb{C}^n} & \int_{\mathbb{C}} \begin{array}{c|c} i & 0 \\ \hline 0 & -i \end{array} \overset{*}{\int}_{\mathbb{C}} = \begin{array}{c|c} i & 0 \\ \hline 0 & -i \end{array} \end{cases}$$

$$\int \in {}^{n}\mathbb{C}^{\circlearrowleft}_{n} \Longrightarrow \int \overset{t}{\int} = 1 \Longrightarrow \begin{array}{c|c} 0 & 1 \\ \hline 1 & 0 \end{array} = \int_{\mathbb{R}} \underbrace{\overset{t}{\int}_{\mathbb{R}} \begin{array}{c|c} 0 & 1 \\ \hline 1 & 0 \end{array}}_{\begin{array}{c|c} 0 & 1 \\ \hline 1 & 0 \end{array} \overset{*}{\int}_{\mathbb{R}}} = \int_{\mathbb{R}} \begin{array}{c|c} 0 & 1 \\ \hline 1 & 0 \end{array} \overset{*}{\int}_{\mathbb{R}}$$

$$\int \in {}^{n}\mathbb{H}^{\circlearrowleft}_{n} \Longrightarrow \int i \overset{*}{\int} = i \Longrightarrow \int_{\mathbb{C}} i \overset{*}{\int}_{\mathbb{C}} = i_{\mathbb{C}} = \begin{array}{c|c} i & 0 \\ \hline 0 & -i \end{array}$$

$${}^{n}\mathbb{C}^{\circlearrowleft}_{\mathbb{R}^n} \xrightarrow{\begin{array}{c|c} \ddagger & 0 \\ \hline 0 & \ddagger \end{array}} {}^{n}\mathbb{H}^{\circlearrowleft}_{\mathbb{C}^n}$$

$$\int \in {}^{n}\mathbb{C}^{\circlearrowleft}_{n} \Longrightarrow \int_{\mathbb{R}} \begin{array}{c|c} i & 0 \\ \hline 0 & -i \end{array} \overset{*}{\int}_{\mathbb{R}} = \int_{\mathbb{R}} \begin{array}{c|c} i & 0 \\ \hline 0 & i \end{array} \begin{array}{c|c} 0 & 1 \\ \hline -1 & 0 \end{array} \begin{array}{c|c} 0 & 1 \\ \hline 1 & 0 \end{array} \overset{*}{\int}_{\mathbb{R}}$$

$$= \begin{array}{c|c} i & 0 \\ \hline 0 & i \end{array} \int_{\mathbb{R}} \begin{array}{c|c} 0 & 1 \\ \hline -1 & 0 \end{array} \begin{array}{c|c} 0 & 1 \\ \hline 1 & 0 \end{array} \overset{*}{\int}_{\mathbb{R}} = \begin{array}{c|c} i & 0 \\ \hline 0 & i \end{array} \begin{array}{c|c} 0 & 1 \\ \hline -1 & 0 \end{array} \underbrace{\int_{\mathbb{R}} \begin{array}{c|c} 0 & 1 \\ \hline 1 & 0 \end{array} \overset{*}{\int}_{\mathbb{R}}}_{\begin{array}{c|c} 0 & 1 \\ \hline 1 & 0 \end{array}} = \begin{array}{c|c} i & 0 \\ \hline 0 & i \end{array} \begin{array}{c|c} 0 & 1 \\ \hline -1 & 0 \end{array} \begin{array}{c|c} 0 & 1 \\ \hline 1 & 0 \end{array} = \begin{array}{c|c} i & 0 \\ \hline 0 & -i \end{array}$$