

$${}^n_2\mathbb{C}_n^{\mathbb{O}} \cong \frac{a \mid b}{-\bar{\dagger} \mid d} \begin{cases} a = -\bar{\dagger} \\ d = -\dagger \end{cases}$$

$${}^n_{\mathbb{C}}\mathbb{H}_n^{\mathbb{O}} \cong \frac{a \mid b}{-\bar{b} \mid \bar{a}} \begin{cases} a = -\bar{\dagger} \\ b = \bar{b} \end{cases}$$

$$\frac{\bar{a} \mid \bar{b}}{-\bar{b}^* \mid \bar{d}} = \mathcal{J} \frac{a \mid b}{-\bar{\dagger} \mid d} \bar{\mathcal{J}} = \frac{d \mid \dagger}{-b \mid a} \Leftrightarrow \begin{cases} d = \bar{a} \\ b = \bar{b} \end{cases}$$

$${}^n_2\mathbb{R}_n^{\mathbb{U}} \cong \frac{a \mid b}{-\bar{\dagger} \mid d} \begin{cases} a = -\bar{\dagger} \\ d = -\dagger \end{cases}$$

$$\frac{\bar{a} \mid \bar{b}}{-\bar{b}^* \mid \bar{d}} = \frac{a \mid b}{-\bar{\dagger} \mid d} \Leftrightarrow \begin{cases} a = \bar{a} \\ b = \bar{b} \\ d = \bar{d} \end{cases}$$

$${}^n\mathbb{C}_n^U \cong \frac{a \mid b}{-b \mid a} \begin{cases} a = \bar{a} = -\dagger a \\ b = \bar{b} = \dagger b \end{cases}$$

$$\frac{a \mid b}{-\bar{b} \mid \bar{a}} = \mathcal{J} \frac{a \mid b}{-\bar{b} \mid \bar{a}} \overset{-1}{\mathcal{J}} = \frac{\bar{a} \mid \bar{b}}{-b \mid a} \Leftrightarrow \begin{cases} a = \bar{a} \\ b = \bar{b} \end{cases}$$

$$\frac{a \mid b}{-\dagger b \mid d} = \mathcal{J} \frac{a \mid b}{-\dagger b \mid d} \overset{-1}{\mathcal{J}} = \frac{d \mid \dagger b}{-b \mid a} \Leftrightarrow \begin{cases} a = d \\ b = \dagger b \end{cases}$$

$$\overbrace{\mathcal{J} - z}^{-1} \underbrace{\mathcal{J} + z} \in {}^n\mathbb{C}_n^{\mathfrak{J}} \Leftrightarrow z \mathcal{J} \in {}^n\mathbb{C}_n^{\mathfrak{J}}$$

$$g = \overbrace{\mathcal{J} - z}^{-1} \underbrace{\mathcal{J} + z}$$

$$\overbrace{\mathcal{J} + z}^{-1} \underbrace{\mathcal{J} - z} = \overset{-1}{g} = \dagger g = \underbrace{-\mathcal{J} + \dagger z} \overbrace{-\mathcal{J} - \dagger z}^{-1} = \underbrace{\mathcal{J} - \dagger z} \overbrace{\mathcal{J} + \dagger z}^{-1}$$

$$\Leftrightarrow \mathcal{J} \mathcal{J} - z \mathcal{J} + \mathcal{J} \dagger z - z \dagger z = \underbrace{\mathcal{J} - z} \underbrace{\mathcal{J} + \dagger z} = \underbrace{\mathcal{J} + z} \underbrace{\mathcal{J} - \dagger z} = \mathcal{J} \mathcal{J} + z \mathcal{J} - \mathcal{J} \dagger z - z \dagger z \Leftrightarrow z \mathcal{J} = \mathcal{J} \dagger z = -\overbrace{z \mathcal{J}}^{\dagger}$$

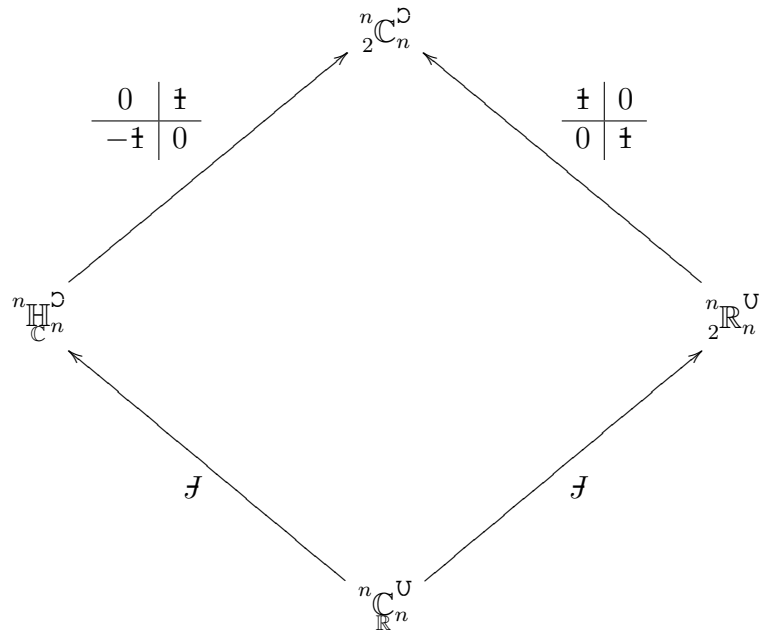
$$\overbrace{\mathcal{J} - z}^{-1} \underbrace{\mathcal{J} + z} \in {}^n\mathbb{R}_n^U \Leftrightarrow z \in {}^n\mathbb{R}_n^{\mathfrak{J}} \mathcal{J}$$

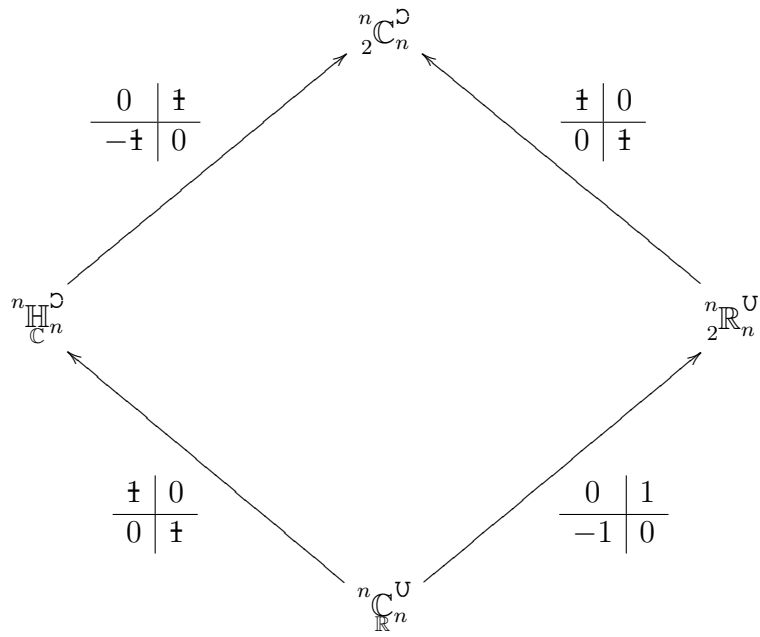
$$z \mathcal{J} = -\mathcal{J} z \Leftrightarrow z = \frac{a \mid b}{b \mid -a} \begin{cases} a = -\dagger a \\ b = -\dagger b \end{cases}$$

$${}^n\mathbb{C}_n^{\mathfrak{O}} \longrightarrow \begin{array}{c} {}^n\mathbb{R}_n^{\mathfrak{U}} \\ {}^n\mathbb{C}_n^{\mathfrak{U}} \\ \mathbb{R}\mathbb{C}_n \end{array}$$

$$z \in {}^n\mathbb{C}_n^{\mathfrak{O}} \longrightarrow {}^n\mathbb{C}_n^{\mathfrak{O}} \ni \overbrace{\mathcal{J} - z}^{-1} \mathcal{J} + z$$

$${}^n\mathbb{C}_n^{\mathfrak{O}} \longrightarrow \begin{array}{c} {}^n\mathbb{H}_n^{\mathfrak{D}} \\ \mathbb{C}\mathbb{H}_n^{\mathfrak{U}} \\ {}^n\mathbb{C}_n^{\mathfrak{U}} \\ \mathbb{R}\mathbb{C}_n \end{array}$$





$$q \in n_2 \mathbb{R}_n^U$$

$$1 = q^\vartheta q = \begin{array}{c} 0 \mid -\mathfrak{t} \\ \mathfrak{t} \mid 0 \end{array} q \begin{array}{c} 0 \mid \mathfrak{t} \\ -\mathfrak{t} \mid 0 \end{array} q$$

$$\overbrace{\begin{array}{c} 0 \mid \mathfrak{t} \\ -\mathfrak{t} \mid 0 \end{array}}^2 q = -1$$

