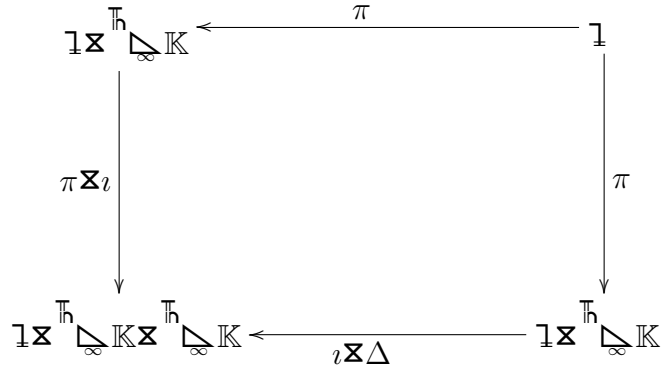


$$\mathbb{1} \otimes \mathbb{h} \triangleleft_{\infty} \mathbb{K} \xleftarrow{\pi} \mathbb{1}$$

$$\mathbb{1}$$

$$\mathbb{1} \otimes \mathbb{h} \triangleleft_{\omega} \mathbb{C}$$



$$\pi \mathbb{1} = \gamma_{\alpha} \otimes \gamma^{\alpha} \Leftrightarrow \mathbb{h}^{\pi} \mathbb{1} = \gamma_{\iota} \mathbb{h}^{\gamma^{\alpha}}$$

$$\pi \gamma_{\alpha} = {}^{\beta} \gamma_{\alpha} \otimes \gamma_{\beta} \Leftrightarrow \mathbb{h}^{\pi} \gamma_{\alpha} = {}^{\beta} \gamma_{\alpha} \mathbb{h}^{\gamma_{\beta}}$$

$$\pi \otimes \iota \pi \mathbb{1} = \pi \otimes \iota \gamma_{\alpha} \otimes \gamma^{\alpha} = \pi \gamma_{\alpha} \otimes \gamma^{\alpha} = {}^{\beta} \gamma_{\alpha} \otimes \gamma_{\beta} \otimes \gamma^{\alpha}$$

$$\iota \otimes \Delta \pi \mathbb{1} = \gamma_{\alpha} \otimes \Delta \gamma^{\alpha}$$

$$\pi \otimes \iota \pi \mathbb{1} = \iota \otimes \Delta \pi \Leftrightarrow \mathbb{h}^{\pi} \mathbb{h}^{\pi} = \widehat{\mathbb{h}^{\iota}}^{\pi}$$

$${}^{\beta} \gamma_{\alpha} \otimes \gamma_{\beta} \otimes \gamma^{\alpha} = \gamma_{\alpha} \otimes \Delta \gamma^{\alpha} \Leftrightarrow$$

$$\mathbb{h}^{\pi} \widehat{\mathbb{h}^{\pi}} \mathbb{1} = \mathbb{h}^{\pi} \gamma_{\iota} \mathbb{h}^{\gamma^{\alpha}} = \widehat{\mathbb{h}^{\pi} \gamma_{\alpha}} \mathbb{h}^{\gamma^{\alpha}} = \widehat{{}^{\beta} \gamma_{\alpha} \mathbb{h}^{\gamma_{\beta}}} \mathbb{h}^{\gamma^{\alpha}} = \widehat{{}^{\beta} \gamma_{\alpha} \mathbb{h}^{\gamma_{\beta} \mathbb{h}^{\gamma^{\alpha}}}} = \gamma_{\alpha} \widehat{\mathbb{h}^{\iota} \Delta \gamma^{\alpha}} = \gamma_{\iota} \mathbb{h}^{\gamma^{\alpha}} = \widehat{\mathbb{h}^{\iota}}^{\pi} \mathbb{1}$$

$$\mathbb{1} \otimes \mathbb{1} \otimes \mathbb{h} \triangleleft_{\infty} \mathbb{K} \xleftarrow{\pi} \mathbb{1} \otimes \mathbb{1}$$

$$\pi \mathbb{1} = \gamma_{\alpha} \otimes \gamma^{\alpha} \varrho \mathbb{1} = \mathbb{1}_{\beta} \otimes \gamma^{\beta} \Rightarrow (\pi \otimes \varrho) \mathbb{1} \otimes \mathbb{1} = \gamma_{\alpha} \otimes \mathbb{1}_{\beta} \otimes \gamma^{\alpha} \gamma^{\beta}$$

$$\begin{array}{ccc}
\underbrace{1 \times 1} \times \underbrace{1 \times 1} \times \underbrace{\mathbb{H} \triangleleft_{\infty} \mathbb{K}} & \xleftarrow{\pi \times \rho} & 1 \times 1 \\
\uparrow \nu \times \nu \times \mu & & \downarrow \pi \times \rho \\
\underbrace{1 \times 1} \times \underbrace{\mathbb{H} \triangleleft_{\infty} \mathbb{K} \times \mathbb{H} \triangleleft_{\infty} \mathbb{K}} & \xleftarrow{\nu \times \theta \times \nu} & \underbrace{1 \times \mathbb{H} \triangleleft_{\infty} \mathbb{K}} \times \underbrace{1 \times \mathbb{H} \triangleleft_{\infty} \mathbb{K}}
\end{array}$$