

$$\mathbb{1} \triangleq \mathbb{1} \in \mathbb{1}$$

$$\underbrace{\mathbb{1} * \mathbb{1}}_z = \mathbb{1}_z \mathbb{1}'_z - \mathbb{1}'_z \mathbb{1}_z$$

$$\underbrace{\mathbb{1} * \mathbb{1}}_z * \mathbb{1}'_z + \underbrace{\mathbb{1}'_z * \mathbb{1}}_z * \mathbb{1}_z + \underbrace{\mathbb{1}'_z * \mathbb{1}'_z}_z * \mathbb{1}_z = 0$$

$$\begin{aligned} 4 \text{LHS}_z &= \sum \underbrace{\mathbb{1} * \mathbb{1}}_z * \mathbb{1}'_z = \underbrace{\mathbb{1} * \mathbb{1}}_z \mathbb{1}'_z - \mathbb{1}'_z \underbrace{\mathbb{1} * \mathbb{1}}_z = \underbrace{\mathbb{1}_z \mathbb{1}'_z - \mathbb{1}'_z \mathbb{1}_z}_z - \mathbb{1}'_z \underbrace{\mathbb{1}_z \mathbb{1}'_z - \mathbb{1}'_z \mathbb{1}_z}_z \\ &= \mathbb{1}_z \mathbb{1}'_z \mathbb{1}'_z - \mathbb{1}'_z \mathbb{1}_z \mathbb{1}'_z - \mathbb{1}'_z \mathbb{1}_z \mathbb{1}'_z - \underbrace{\mathbb{1}'_z \mathbb{1}_z \mathbb{1}'_z}_z + \mathbb{1}'_z \mathbb{1}_z \mathbb{1}'_z + \underbrace{\mathbb{1}'_z \mathbb{1}_z \mathbb{1}'_z}_z = 0 \end{aligned}$$

$$\begin{array}{c} \mathbb{1} \triangleq \mathbb{1} \\ \updownarrow \\ \mathbb{1} = \mathbb{1}^{-1} \end{array}$$

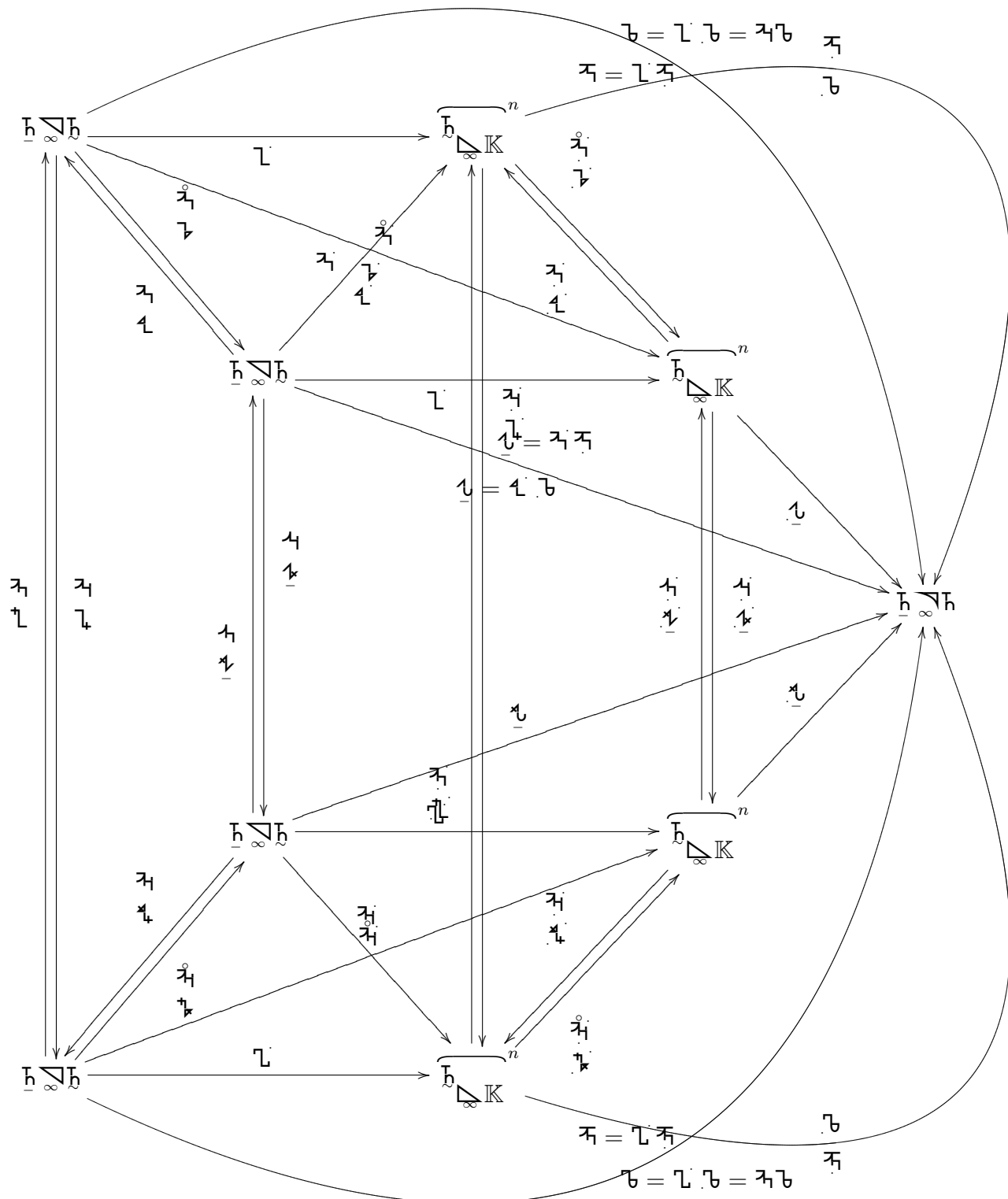
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$$\mathbb{L} \cdot \mathbb{L} = \begin{cases} \mathbb{L} \mathbb{L} \mathbb{L} \\ \mathbb{L} \mathbb{L} \mathbb{L} \end{cases}$$

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