

$$\mathbb{K}^n \times_n \mathbb{K} \ni .4 = \begin{bmatrix} 1.4 \\ \vdots \\ n.4 \end{bmatrix}$$

$$\begin{array}{ccc} & {}_n\mathbb{K} & \\ \uparrow & & \downarrow \\ {}^h\mathfrak{A}_1 & & {}^h\mathfrak{A}_1 \\ \downarrow & & \downarrow \\ & {}_n\mathbb{K} & \end{array}$$

$$\mathbb{K}^n \xrightarrow[\downarrow]{\begin{smallmatrix} {}^h\mathfrak{A}_1 \\ \downarrow \end{smallmatrix}} {}_n\mathbb{K}^n$$

$$\mathbb{K}^n \xrightarrow[\mathbb{T}_h = \downarrow \cdot \hat{\eta} \cdot \downarrow]{\mathbb{T}_h = {}^h\overline{\mathfrak{A}}_1^* \cdot \hat{\eta} \cdot {}^h\mathfrak{A}_1} {}_{p:q}\mathbb{K}^{p:q}$$

$${}^h\mathfrak{H}^{\cdot\cdot} = {}^h\overline{\mathfrak{A}}_1^* \cdot \hat{\eta} \cdot {}^h\mathfrak{A}_1$$

$${}^h\mathfrak{H}^{\mu\nu} = {}^h\overline{\mathfrak{A}}_1^{*\nu} \cdot \eta^{ij} \cdot {}^h\mathfrak{A}_{1j}^{\circ\nu}$$

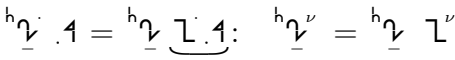
$$\mathbb{T}_h = \downarrow^* \cdot \eta^{\cdot\cdot} \cdot \downarrow$$

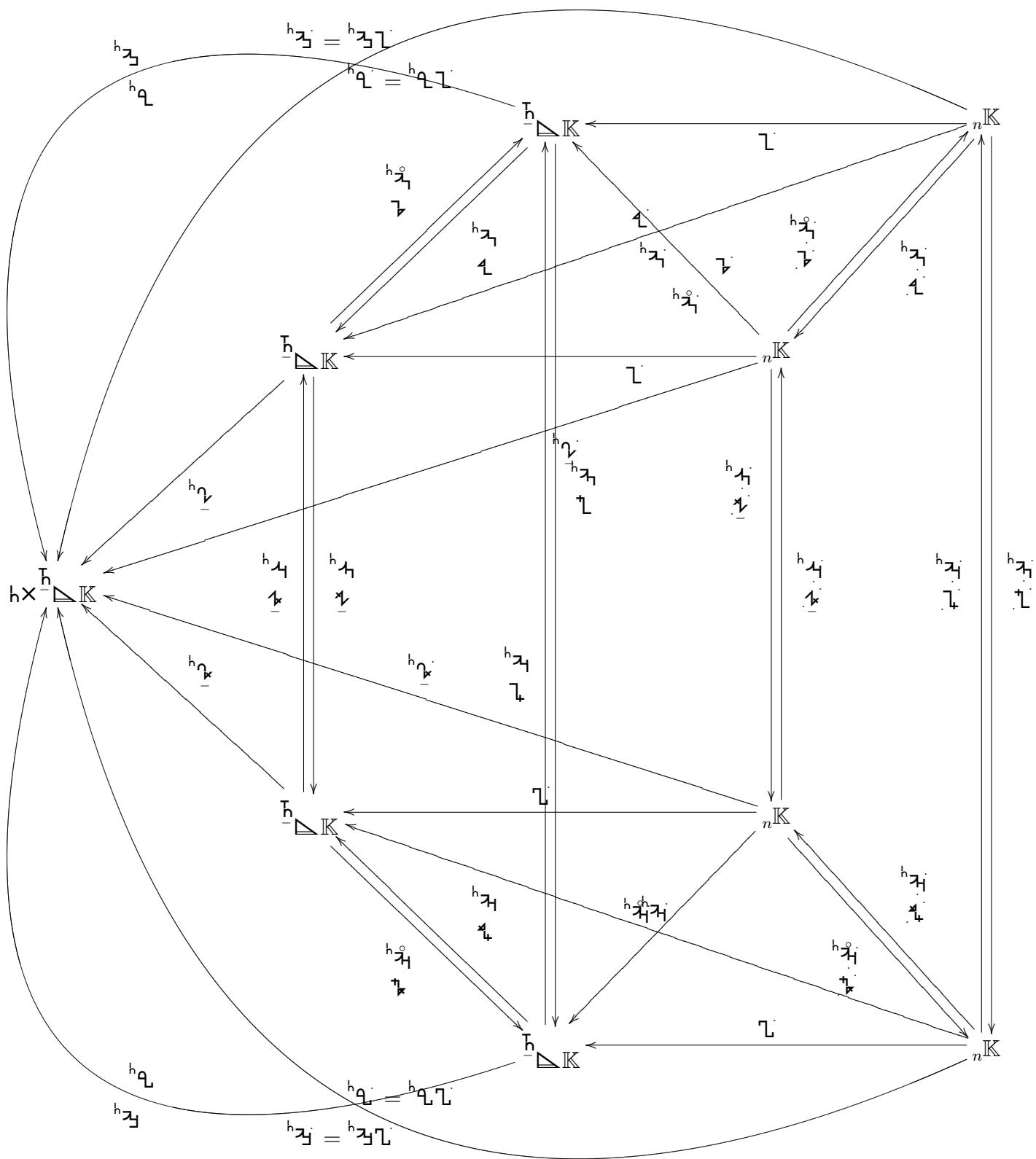
$$.\mathfrak{A} = \left\{ \begin{smallmatrix} {}^h\mathfrak{A}_1 \cdot {}^h\mathfrak{A}_1 \cdot \mathfrak{A} \\ \downarrow \cdot \downarrow \cdot \mathbb{A} \cdot \mathfrak{A} \end{smallmatrix} \right\} \quad : \quad {}_\mu \delta^\nu = \left\{ \begin{smallmatrix} \mathfrak{A}_\mu^k \cdot \mathfrak{A}_k^{\circ\nu} \\ \mathbb{A}_\mu^k \cdot \mathbb{A}_k^\nu \end{smallmatrix} \right\}$$

$$.4 = \left\{ \begin{smallmatrix} {}^h\mathfrak{A}_1 \cdot {}^h\mathfrak{A}_1 \cdot 4 \\ \mathbb{A} \cdot \downarrow \cdot \mathbb{A} \end{smallmatrix} \right\} \quad : \quad {}_i \delta^j = \left\{ \begin{smallmatrix} \mathfrak{A}_i^\lambda \cdot \mathfrak{A}_\lambda^j \\ \mathbb{A}_i^\lambda \cdot \mathbb{A}_\lambda^j \end{smallmatrix} \right\}$$

$$.\mathfrak{A} \times .\acute{A} = .\acute{\mathfrak{A}} \cdot \hat{\eta}^{\cdot\cdot} \cdot \acute{A} = {}_i \acute{\mathfrak{A}} \cdot \eta^{ij} \cdot \acute{A}_j$$

$$.4 \times_h .\acute{A} = \left\{ \begin{array}{ll} \underbrace{{}^h\mathfrak{A}_1.4 \times {}^h\mathfrak{A}_1.\acute{A}} & = \overbrace{{}^h\mathfrak{A}_1.4 \cdot \hat{\eta} \cdot {}^h\mathfrak{A}_1.\acute{A}}^* = \underbrace{.4 {}^h\overline{\mathfrak{A}}_1^* \cdot \hat{\eta} \cdot {}^h\mathfrak{A}_1.\acute{A}} = .4 \cdot \underbrace{{}^h\overline{\mathfrak{A}}_1^* \cdot \hat{\eta} \cdot {}^h\mathfrak{A}_1}_{\cdot\cdot} \cdot \acute{A} = .4 {}^h\mathfrak{H}^{\cdot\cdot} \cdot \acute{A} = {}_\mu .4 {}^h\mathfrak{H}^{\mu\nu} \cdot \acute{A}_\nu \\ \underbrace{\downarrow.4 \times \downarrow.\acute{A}} & = \overbrace{\downarrow.4 \cdot \hat{\eta} \cdot \downarrow.\acute{A}}^* = \underbrace{.4 \cdot \downarrow^* \cdot \hat{\eta} \cdot \downarrow.\acute{A}} = .4 \cdot \underbrace{\downarrow^* \cdot \hat{\eta} \cdot \downarrow}_{\cdot\cdot} \cdot \acute{A} = .4 \cdot \mathbb{T}_h \cdot \acute{A} = {}_\mu .4 \cdot \mathbb{T}_h^\nu \cdot \acute{A}_\nu \end{array} \right.$$





$$\mathcal{L}^{\cdot,\cdot} = \begin{cases} \mathcal{A}^{\cdot,\cdot} \\ \mathcal{B}^{\cdot,\cdot} \end{cases} \quad \mathcal{L}^j = \begin{cases} \mathcal{A}^j \\ \mathcal{B}^j \end{cases}$$

$$\begin{cases} \mathcal{A}^{\cdot,\cdot} = \mathcal{A}^{\cdot,\cdot} \\ \mathcal{B}^{\cdot,\cdot} = \mathcal{B}^{\cdot,\cdot} \end{cases} \quad \begin{cases} \mathcal{A}^j = \mathcal{A}^j \\ \mathcal{B}^j = \mathcal{B}^j \end{cases}$$

$$\begin{cases} \mathcal{A}^{\cdot,\cdot} = \mathcal{A}^{\cdot,\cdot} \\ \mathcal{B}^{\cdot,\cdot} = \mathcal{B}^{\cdot,\cdot} \end{cases} \quad \begin{cases} \mathcal{A}^j = \mathcal{A}^j \\ \mathcal{B}^j = \mathcal{B}^j \end{cases}$$

$$\mathcal{L}^{\cdot,\cdot} = \begin{cases} \mathcal{A}^{\cdot,\cdot} \\ \mathcal{B}^{\cdot,\cdot} \end{cases} \quad \mathcal{L}^j = \begin{cases} \mathcal{A}^j \\ \mathcal{B}^j \end{cases}$$

$$\begin{cases} \mathcal{A}^{\cdot,\cdot} = \mathcal{A}^{\cdot,\cdot} \\ \mathcal{B}^{\cdot,\cdot} = \mathcal{B}^{\cdot,\cdot} \end{cases} \quad \begin{cases} \mathcal{A}^j = \mathcal{A}^j \\ \mathcal{B}^j = \mathcal{B}^j \end{cases}$$

$$\mathcal{L}^{\cdot,\cdot} = \mathcal{L}^{\cdot,\cdot} = \mathcal{L}^{\cdot,\cdot}$$

