$$\overbrace{\underline{\varrho}_{\varkappa}\mathcal{E}_b^n}^{x} = \partial_\varepsilon{}^{k_\varepsilon x}\mathcal{E}_b^n = \overbrace{\underbrace{\varkappa x} \bowtie b}^{x}\mathcal{E}_b^{n-} = \overbrace{x \bowtie \underbrace{\varkappa^* b}}^{x}\mathcal{E}_b^{n-}$$

$$\overbrace{\underline{\varrho}_{v\overset{*}{w}}\mathcal{E}_b^n}^{x} = \overbrace{x \bowtie \underbrace{w\overset{*}{v}b}}^{x}\mathcal{E}_b^{n-}$$

$$\mathcal{E}_a^m \bowtie \overbrace{\underline{\varrho}_{v\overset{*}{w}}\mathcal{E}_b^n} = \int {}^a\mathcal{E}_x^m \overbrace{\underline{\varrho}_{v\overset{*}{w}}\mathcal{E}_b^n}^{x} = \int {}^a\mathcal{E}_x^m \overbrace{x \bowtie \underbrace{w\overset{*}{v}b}}^{x}\mathcal{E}_b^{n-}$$

$$\overbrace{\alpha_w\psi}^{x} = \frac{c_n\varrho_{2n-1}}{(a/2)_{n-}}\left(n-1+\frac{\alpha+p}{2}\right)\overbrace{\partial_w\psi}^{x} - \frac{c_{n+}\varrho_{2n+1}}{(a/2)_{n+}}\left(n+\frac{\alpha+p}{2}\right)\underbrace{x \bowtie w}{}^{x}\psi$$

$$\alpha_w\psi = \frac{c_n\varrho_{2n-1}}{(a/2)_{n-}}\left(n-1+\frac{\alpha+p}{2}\right)\partial_w\psi - \frac{c_{n+}\varrho_{2n+1}}{(a/2)_{n+}}\left(n+\frac{\alpha+p}{2}\right)\ell_w\psi$$

$$q \in \mathcal{P}_n(Z)$$

$$\alpha_w q = A_n\,\partial_w q - B_n P\overbrace{\ell_w q}$$

$$A_n\overbrace{\mathcal{J}_a \bowtie \underbrace{\partial_w\mathcal{E}_b^n}} = \frac{B_m}{(a/2)_m}\underbrace{P\ell_w\mathcal{E}_a^m}\bowtie\mathcal{E}_b^n$$

$$B_n\underbrace{\mathcal{J}_a \bowtie \overbrace{P\underbrace{\ell_w\mathcal{E}_b^n}}} = \frac{A_m}{(a/2)_m}\underbrace{\partial_w\mathcal{E}_a^m}\bowtie\mathcal{E}_b^n$$

$$A_n\overbrace{\mathcal{J}_a \bowtie \underbrace{\partial_w\mathcal{E}_b^n}} - B_n\underbrace{\mathcal{J}_a \bowtie \overbrace{P\underbrace{\ell_w\mathcal{E}_b^n}}} = \mathcal{J}_a \bowtie \overbrace{A_n\partial_w\mathcal{E}_b^n - B_nP\underbrace{\ell_w\mathcal{E}_b^n}} = \mathcal{J}_a \bowtie \underbrace{\alpha_w\mathcal{E}_b^n} = -\underbrace{\alpha_w\mathcal{J}_a}\bowtie\mathcal{E}_b^n$$

$$= -\frac{1}{(a/2)_m}\underbrace{\alpha_w\mathcal{E}_a^m}\bowtie\mathcal{E}_b^n = -\frac{1}{(a/2)_m}\overbrace{A_m\partial_w\mathcal{E}_a^m - B_mP\underbrace{\ell_w\mathcal{E}_a^m}}\bowtie\mathcal{E}_b^n = -\frac{A_m}{(a/2)_m}\underbrace{\partial_w\mathcal{E}_a^m}\bowtie\mathcal{E}_b^n + \frac{B_m}{(a/2)_m}\underbrace{P\ell_w\mathcal{E}_a^m}\bowtie\mathcal{E}_b^n$$

$$\alpha_v \times \alpha_w = A_n\,B_{n-}P\left(\ell_w\partial_v - \ell_v\partial_w\right) + B_n\,A_{n+}\left(\partial_wP\ell_v - \partial_vP\ell_w\right)$$

$$\alpha_v\left(\alpha_w^n q\right) = \alpha_v\left(A_n\partial_w q - B_nP\left(\ell_w q\right)\right) = A_n\,\alpha_v\left(\partial_w q\right) - B_n\,\alpha_v\left(P\left(\ell_w q\right)\right)$$

$$= A_n\,A_{n-}\,\partial_v\,\partial_w q - A_n\,B_{n-}P\left(\ell_v\partial_w q\right) - B_n\,A_{n+}\,\partial_vP\left(\ell_w q\right) + B_n\,B_{n+}P\left(\ell_vP\left(\ell_w q\right)\right)$$

$$\text{LHS} = A_n\,A_{n-}\overbrace{\partial_v \times \partial_w}^{=0}q + A_n\,B_{n-}P\left(\ell_w\partial_v - \ell_v\partial_w\right)q + B_n\,A_{n+}\left(\partial_wP\ell_v - \partial_vP\ell_w\right)q + B_n\,B_{n+}P\overbrace{\ell_v \times \ell_w}^{=0}q$$