$$\overset{\sharp}{{}_{Mk}\blacksquare}_{1} = \int\limits_{dg}^{\mathbb{R}_K} \overset{Kg}{\blacksquare} \left(gk^{-1}\right)^{-1-\varrho}_{K\overset{\blacksquare}{\circ}\underline{K}N}$$

$$\overset{\sharp}{\blacksquare}_{1} = \int\limits_{dg}^{\mathbb{R}_K} \overset{g}{\blacksquare}\, {}_{g}\blacksquare K^{-1} = \int\limits_{da}^{\overset{\blacksquare}{\circ}K} \overset{a}{\blacksquare}\, {}_{a}\blacksquare K^{-1}$$

$$\int\limits_{dg}^{\mathbb{R}_K} \overset{Kg}{\blacksquare} \left(gk^{-1}\right)^{-1-\varrho}_{K\overset{\blacksquare}{\circ}\underline{K}N} = \int\limits_{dg}^{\mathbb{R}_K} \overset{Kg}{\blacksquare} \int\limits_{dk}^{K} \left(gk^{-1}\right)^{-1-\varrho}_{K\overset{\blacksquare}{\circ}\underline{K}N} = \text{RHS}$$

$\blacksquare K$ fix K

$$\left(g\overbrace{mk}^{-1}\right)_{K\overset{\blacksquare}{\circ}\underline{K}N} = \left(g\,\overline{k}^{1}\overline{m}^{1}\right)_{K\overset{\blacksquare}{\circ}\underline{K}N} \overset{\text{HEL}}{\underset{435}{=}} \left(g\,\overline{k}^{1}\right)_{K\overset{\blacksquare}{\circ}\underline{K}N} \Longrightarrow \overset{\sharp}{{}_{Mk}\blacksquare}_{1} \text{ well-def}$$

$\overset{\sharp}{\blacksquare}_{1}$ hol $1 \in \overset{\blacksquare}{{}_{\circ}\underline{K}}\overset{\sharp}{i} - W\varrho$

$$\overset{\blacksquare}{K}_{1}\overset{1}{\times}\blacksquare = \underbrace{\overset{\sharp}{\blacksquare}_{1}}_{\sharp}$$

$$\overbrace{{}_{g}\overset{\blacksquare}{K}_{1}\overset{1}{\times}\blacksquare} = \int\limits_{d\gamma}^{\mathbb{R}_K} {}_{g\gamma^{-1}}\overset{\blacksquare}{K}_{1}\, {}^{K\gamma}\blacksquare = \int\limits_{d\gamma}^{\mathbb{R}_K} \int\limits_{dk}^{K} \left(gk^{-1}\right)^{1-\varrho}_{K\overset{\blacksquare}{\circ}\underline{K}N} \left(\gamma k^{-1}\right)^{-1-\varrho}_{K\overset{\blacksquare}{\circ}\underline{K}N} {}^{K\gamma}\blacksquare$$

$$= \int\limits_{dk}^{K} \left(gk^{-1}\right)^{1-\varrho}_{K\overset{\blacksquare}{\circ}\underline{K}N} \int\limits_{d\gamma}^{\mathbb{R}_K} \left(\gamma k^{-1}\right)^{-1-\varrho}_{K\overset{\blacksquare}{\circ}\underline{K}N} {}^{K\gamma}\blacksquare = \int\limits_{dk}^{K} \left(gk^{-1}\right)^{1-\varrho}_{K\overset{\blacksquare}{\circ}\underline{K}N} \overset{\sharp}{{}_{Mk}\blacksquare}_{1}$$

$$\blacksquare = \overset{\blacksquare}{K}_{1}\overset{1}{\times}\blacksquare \int\limits_{i\overset{\blacksquare}{\circ}\underline{K}}^{d1} = \underbrace{\overset{\sharp}{\blacksquare}}_{\sharp}$$

$$^{Kg}\blacktriangleleft = \underset{\sharp}{\overset{Kg}{\smile}}{}^{\sharp}\blacktriangleleft = \int_{dk}^{K} \left(gk^{-1}\right)^{\dashv - \varrho}_{K \underset{\circ}{\P}\underline{K}N} {}_{Mk}{}^{\sharp}\blacktriangleleft_{\dashv} \int_{i \underset{\circ}{\P}\underline{\overset{\sharp}{K}}}^{d\dashv} = \left(\overset{-1}{g}\right)^{-\dashv - \varrho}_{K \underset{\circ}{\P}\underline{K}N} \underset{M \neg K}{\bowtie} {}^{\sharp}\blacktriangleleft_{\dashv} \int_{\underset{\circ}{\P}\underline{\overset{\sharp}{K}}\, i}^{d\dashv}$$

$$^{g}\blacktriangleleft = {}^{\P}_{g}K_{\dashv} {}^{\sharp}\blacktriangleleft_{\dashv} \int_{\underset{\circ}{\P}\underline{\overset{\sharp}{K}}_{\geqslant}\, i}^{d\dashv} = \frac{1}{|W|} {}^{\P}_{g}K_{\dashv} {}^{\sharp}\blacktriangleleft_{\dashv} \int_{\underset{\circ}{\P}\underline{\overset{\sharp}{K}}\, i}^{d\dashv}$$

$$\int_{dg}^{\mathbb{R}_K} \overline{{}_{KgK}\urcorner}^{2} = \overline{{}^{\sharp}\blacktriangleleft_{\dashv}}^{2} \int_{\underset{\circ}{\P}\underline{\overset{\sharp}{K}}_{\geqslant}\, i}^{d\dashv} = \frac{1}{|W|} \overline{{}^{\sharp}\blacktriangleleft_{\dashv}}^{2} \int_{\underset{\circ}{\P}\underline{\overset{\sharp}{K}}\, i}^{d\dashv}$$