

$$\begin{array}{ccc}
 \begin{array}{c} \mathbb{H} \\ \triangleleft \\ \mathbb{H} \end{array} \times \begin{array}{c} \mathbb{H} \\ \triangleleft \\ \mathbb{H} \end{array} & \xleftarrow{\times} & \begin{array}{c} \mathbb{H} \\ \triangleleft \\ \mathbb{H} \end{array} \times \begin{array}{c} \mathbb{H} \\ \triangleleft \\ \mathbb{H} \end{array} \times \begin{array}{c} \mathbb{H} \\ \triangleleft \\ \mathbb{H} \end{array} \\
 \\
 \mathbb{H} \times \mathbb{H} & \xrightarrow{\cong} & \mathbb{H} \times \mathbb{H} \\
 \downarrow \cong \times \acute{\alpha} & & \downarrow \acute{\alpha} \\
 \mathbb{H} \times \mathbb{K} & \xrightarrow{\cong} & \mathbb{H} \times \mathbb{K}
 \end{array}$$