

## Step 5

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$$\begin{array}{ccccc}
S^0 & \xrightarrow{\lambda_{S^0}^{S^0, -1}} & S^0 \wedge S^0 & \xrightarrow{id_{S^0}^{\otimes, -1}} & S^0 \otimes_{S^0} S^0 & \xrightarrow{id_{\mathbb{1}_{S^0}}^{\otimes, -1} \wedge id_{S^0}} & \mathbb{1}_{S^0} \otimes_{S^0} S^0 \\
\downarrow [x] & & \downarrow id_{S^0} \wedge [x] & & \downarrow id_{S^0} \otimes_{S^0} [x] & & \downarrow id_{\mathbb{1}_{S^0}} \wedge [x] \\
X & \xrightarrow{\lambda_X^{S^0, -1}} & S^0 \wedge X & \xrightarrow{id_{S^0}^{\otimes, -1}} & S^0 \otimes_{S^0} X & \xrightarrow{id_{\mathbb{1}_{S^0}}^{\otimes, -1} \wedge id_X} & \mathbb{1}_{S^0} \otimes_{S^0} X \\
& & \downarrow id_{S^0} \wedge [x] & & \downarrow id_{S^0} \otimes_{S^0} [x] & & \downarrow id_{\mathbb{1}_{S^0}} \wedge [x] \\
& & S^0 \wedge X & \xrightarrow{id_{S^0}^{\otimes, -1}} & S^0 \otimes_{S^0} X & & \mathbb{1}_{S^0} \otimes_{S^0} X
\end{array}$$

(1)  $\lambda_{S^0}'^{-1}$  (2)  $\lambda_X'$  (3)  $\lambda_{S^0}^{S^0, -1}$  (4)  $\lambda_X^{S^0, -1}$  (5)  $\lambda_X'$