

Step 1

$$\begin{array}{ccccc}
 & S^0 \wedge S^0 & \xrightarrow{\text{id}_{S^0, S^0}^{\otimes, -1}} & S^0 \otimes_{S^0} S^0 & \xrightarrow{\text{id}_{\mathbb{1}/S^0}^{\otimes, -1} \wedge \text{id}_{S^0}} & \mathbb{1}_{S^0} \otimes_{S^0} S^0 \\
 & \nearrow \lambda_{S^0}^{S^0, -1} & & \searrow & & \\
 S^0 & \xrightarrow{\quad \lambda_{S^0}'^{-1} \quad} & & & & \\
 & \downarrow \text{id}_{S^0} \wedge [x] & (1) & \downarrow \text{id}_{S^0} \otimes_{S^0} [x] & & \\
 & S^0 \wedge X & \xrightarrow{\text{id}_{S^0, X}^{\otimes, -1}} & S^0 \otimes_{S^0} X & & \\
 & \nearrow \lambda_X^{S^0, -1} & (2) & \searrow \text{id}_{\mathbb{1}/S^0}^{\otimes, -1} \wedge \text{id}_X & & \\
 X & \xrightarrow{\quad \lambda_X'^{-1} \quad} & & & & \mathbb{1}_{S^0} \otimes_{S^0} X \\
 & & & & & \downarrow \text{id}_{\mathbb{1}_{S^0}} \wedge [x] \\
 & & & & & X
 \end{array}$$

Additional labels and boxes in the diagram:

- Box (3) is associated with the arrow $\text{id}_{S^0} \wedge [x]$.
- Box (4) is associated with the arrow $\text{id}_{S^0} \otimes_{S^0} [x]$.
- Box (5) is associated with the arrow $\text{id}_{S^0, X}^{\otimes, -1}$.
- Box (1) is associated with the arrow $\lambda_{S^0}'^{-1}$.
- Box (2) is associated with the arrow $\text{id}_{S^0, X}^{\otimes, -1}$.