

Step 4

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

(3) $S^0 \wedge S^0 \xrightarrow{\text{id}_{S^0} \wedge [x]} S^0 \wedge X$
 (4) $S^0 \otimes_{\text{Sets}_*} S^0 \xrightarrow{\text{id}_{S^0} \otimes_{\text{Sets}_*} [x]} S^0 \otimes_{\text{Sets}_*} X$
 (5) $S^0 \wedge X \xrightarrow{\text{id}_{\text{Sets}_*|S^0, X}^{\otimes, -1}} S^0 \otimes_{\text{Sets}_*} X$