

Step 6

$$\begin{array}{ccccc}
 & S^0 \wedge S^0 & \xrightarrow{\text{id}_{\text{Sets}_*|S^0, S^0}^{\otimes, -1}} & S^0 \otimes_{\text{Sets}_*} S^0 & \xrightarrow{S^0 \text{id}_{\mathbb{1}/\text{Sets}_*}^{\otimes, -1} \wedge \text{id}_{S^0}} \\
 \nearrow \lambda_{S^0}^{\text{Sets}_*, -1} & & & & \\
 S^0 & \xrightarrow{\lambda_{S^0}^{\prime, -1}} & \mathbb{1}_{\text{Sets}_*} \otimes_{\text{Sets}_*} S^0 & & \\
 \downarrow \text{id}_{S^0} \wedge [x] & (1) & \downarrow \text{id}_{S^0} \otimes_{\text{Sets}_*} [x] & & \\
 (3) & & (4) & & \\
 & S^0 \wedge X & \xrightarrow{\text{id}_{\text{Sets}_*|S^0, X}^{\otimes, -1}} & S^0 \otimes_{\text{Sets}_*} X & \xrightarrow{-\text{id}_{\mathbb{1}/\text{Sets}_*}^{\otimes, -1} \wedge \text{id}_X} \\
 \downarrow [x] & & & & \\
 X & \xrightarrow{\lambda_X^{\prime, -1}} & \mathbb{1}_{\text{Sets}_*} \otimes_{\text{Sets}_*} X & & \\
 \nearrow \lambda_X^{\text{Sets}_*, -1} & (2) & & &
 \end{array}$$

Diagram illustrating Step 6 of a proof, showing a commutative diagram involving various objects and maps.

The diagram consists of several nodes and arrows:

- Top Row:**
 - $S^0 \wedge S^0 \xrightarrow{\text{id}_{\text{Sets}_*|S^0, S^0}^{\otimes, -1}} S^0 \otimes_{\text{Sets}_*} S^0$
 - $S^0 \otimes_{\text{Sets}_*} S^0 \xrightarrow{S^0 \text{id}_{\mathbb{1}/\text{Sets}_*}^{\otimes, -1} \wedge \text{id}_{S^0}} \mathbb{1}_{\text{Sets}_*} \otimes_{\text{Sets}_*} S^0$
- Left Column:**
 - $S^0 \xrightarrow{\lambda_{S^0}^{\text{Sets}_*, -1}} S^0 \wedge S^0$
 - $S^0 \xrightarrow{[x]} X$
- Bottom Row:**
 - $S^0 \wedge X \xrightarrow{\text{id}_{\text{Sets}_*|S^0, X}^{\otimes, -1}} S^0 \otimes_{\text{Sets}_*} X$
 - $S^0 \otimes_{\text{Sets}_*} X \xrightarrow{-\text{id}_{\mathbb{1}/\text{Sets}_*}^{\otimes, -1} \wedge \text{id}_X} \mathbb{1}_{\text{Sets}_*} \otimes_{\text{Sets}_*} X$
- Right Column:**
 - $\mathbb{1}_{\text{Sets}_*} \otimes_{\text{Sets}_*} S^0 \xrightarrow{\text{id}_{\mathbb{1}_{\text{Sets}_*}} \wedge [x]} \mathbb{1}_{\text{Sets}_*} \otimes_{\text{Sets}_*} X$
- Horizontal Maps:**
 - $S^0 \xrightarrow{\lambda_{S^0}^{\prime, -1}} \mathbb{1}_{\text{Sets}_*} \otimes_{\text{Sets}_*} S^0$
 - $X \xrightarrow{\lambda_X^{\prime, -1}} \mathbb{1}_{\text{Sets}_*} \otimes_{\text{Sets}_*} X$
- Intermediate Maps:**
 - $S^0 \wedge S^0 \xrightarrow{\text{id}_{S^0} \wedge [x]} S^0 \wedge X$
 - $S^0 \otimes_{\text{Sets}_*} S^0 \xrightarrow{\text{id}_{S^0} \otimes_{\text{Sets}_*} [x]} S^0 \otimes_{\text{Sets}_*} X$
- Annotations:**
 - (\neq) is placed above the horizontal map $S^0 \xrightarrow{\lambda_{S^0}^{\prime, -1}} \mathbb{1}_{\text{Sets}_*} \otimes_{\text{Sets}_*} S^0$.
 - (3) is placed to the left of the map $S^0 \wedge S^0 \xrightarrow{\text{id}_{S^0} \wedge [x]} S^0 \wedge X$.
 - (4) is placed to the right of the map $S^0 \otimes_{\text{Sets}_*} S^0 \xrightarrow{\text{id}_{S^0} \otimes_{\text{Sets}_*} [x]} S^0 \otimes_{\text{Sets}_*} X$.
 - (5) is placed in the center of the diagram.
 - (2) is placed below the horizontal map $X \xrightarrow{\lambda_X^{\prime, -1}} \mathbb{1}_{\text{Sets}_*} \otimes_{\text{Sets}_*} X$.