

Step 3

The diagram illustrates the following relationships:

- Top Row:**
 - $S^0 \xrightarrow{\rho_{S^0}^{Sets_*, -1}} S^0 \wedge S^0 \xrightarrow{id_{Sets_*|S^0, S^0}^{\otimes, -1}} S^0 \otimes_{Sets_*} S^0 \xrightarrow{S^0 id_{S^0} \wedge id_{\mathbb{1}|Sets_*}^{\otimes, -1}} S^0 \otimes_{Sets_*} \mathbb{1}_{Sets_*}$
- Bottom Row:**
 - $X \xrightarrow{\rho_X^{Sets_*, -1}} X \wedge S^0 \xrightarrow{id_{Sets_*|X, S^0}^{\otimes, -1}} X \otimes_{Sets_*} S^0 \xrightarrow{-id_X \wedge id_{\mathbb{1}|Sets_*}^{\otimes, -1}} X \otimes_{Sets_*} \mathbb{1}_{Sets_*}$
- Vertical and Diagonal Maps:**
 - $S^0 \xrightarrow{[x]} X$
 - $S^0 \wedge S^0 \xrightarrow{[x] \wedge id_{S^0}} X \wedge S^0$
 - $S^0 \otimes_{Sets_*} S^0 \xrightarrow{[x] \otimes_{Sets_*} id_{S^0}} X \otimes_{Sets_*} S^0$
 - $S^0 \otimes_{Sets_*} \mathbb{1}_{Sets_*} \xrightarrow{[x] \wedge id_{\mathbb{1}_{Sets_*}}} X \otimes_{Sets_*} \mathbb{1}_{Sets_*}$
 - $\rho'_{S^0}^{-1}: S^0 \wedge S^0 \rightarrow S^0 \otimes_{Sets_*} \mathbb{1}_{Sets_*}$ (labeled (1))
 - $\rho'_X^{-1}: X \wedge S^0 \rightarrow X \otimes_{Sets_*} \mathbb{1}_{Sets_*}$ (labeled (2))
 - $\rho'_{S^0}^{-1}: S^0 \otimes_{Sets_*} S^0 \rightarrow X \otimes_{Sets_*} S^0$ (labeled (5))
- Additional Labels:**
 - (3) is associated with the map $[x] \wedge id_{S^0}$.
 - (4) is associated with the map $[x] \otimes_{Sets_*} id_{S^0}$.