

# Example of a Glued Surface

$$X = \text{[Square with arrows]} = \text{[Torus]} = UV$$

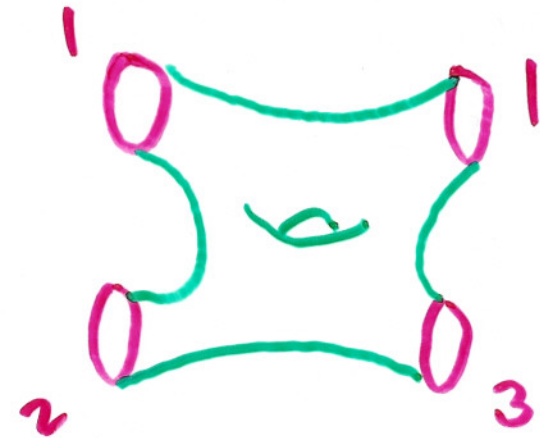
$$U = \text{[Green hatched square with hole and arrows]}$$

$$V = \text{[Blue hatched square with hole and arrows]}$$

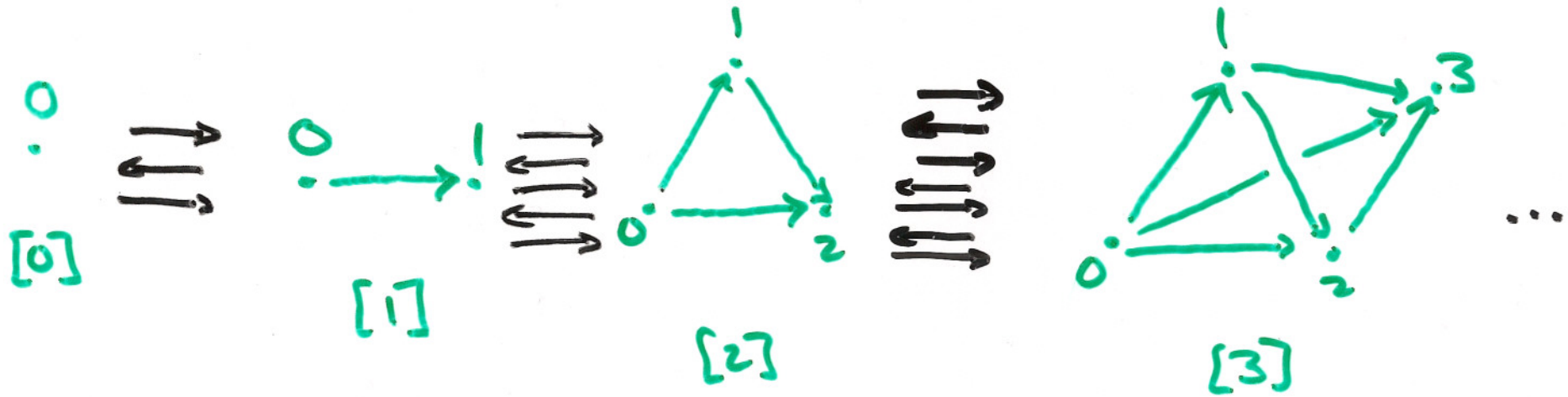
$$U \cap V = \text{[Cross-hatched square with hole and arrows]}$$

# Gluing a Surface is like Cancellation

$$X_{\{1,2\},\{1,3\}} \longrightarrow X_{\{2\},\{3\}}$$



# Visualization of the Category $\Delta$



$\Delta$  is the category of all standard simplices and simplicial maps between them.