Constituents

1. an object $Z \in \mathsf{Ob}_{\mathbf{C}}$ ("the coproduct" of X and Y)

2. injection morphisms $\iota_1: X \to Z$ and $\iota_2: Y \to Z$

Definition (Coproduct). Let C be a category and let $X, Y \in Ob_{\mathbb{C}}$ be objects. The

coproduct of X and Y is:

Conditions

1. For any $T \in \mathrm{Ob}_{\mathbf{C}}$ and any morphisms $f: X \to T, g: Y \to T$, there exists a unique morphism $\psi_{f,g}: Z \to T$ such that $f = \iota_1 \circ \psi_{f,g}$ and $g = \iota_2 \circ \psi_{f,g}$.