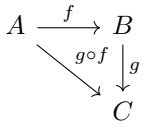
0.1 Duality

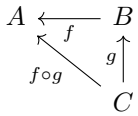
Proposition 1. Formal Duality For any sentence Σ in the language of category theory, if Σ follows from the axioms for categories, then so does its dual Σ^*:

$$CT \Rightarrow \Sigma \text{ implies } CT \Rightarrow \Sigma^*$$

Taking a diagram to illustrate, if this is a statement Σ



then this is the dual statement Σ^*



Note how close this is to the idea of an opposite category C^{op}.

Proposition 2. Conceptual duality For any statement Σ about categories, if Σ holds for all categories, then so does the dual statement Σ^*.