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^*:

$$CT \Rightarrow \Sigma implies CT \Rightarrow \Sigma^*$$

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

$$
\begin{array}{ccc}
A & \xrightarrow{\ f\ } & B \\
 & \searrow{\scriptstyle g \circ f} & \downarrow{\scriptstyle g} \\
 & & C
\end{array}
$$

then this is the dual statement Σ^*

$$
\begin{array}{ccc}
A & \xleftarrow{\ f\ } & B \\
 & \nwarrow{\scriptstyle f \circ g} & \uparrow{\scriptstyle g} \\
 & & C
\end{array}
$$

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^*.