1.1

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***1.1** **(i)** Prove, in every category $\mathcal{C}$, that each object $A \in \mathcal{C}$ has a unique identity morphism.

(ii) If f is an isomorphism in a category, prove that its inverse is unique.

(i) Let $1, 1' \in \mathrm{Hom}(A,A)$ be identity morphisms. Then $1 = 11' = 1'$.

(ii) Let $A \leftrightarrows B$ have inverses $g, g' \in \mathrm{Hom}(B,A)$. Then $g = gfg' = g'$.