Definition (Full and faithful functors). A functor $F : \mathbf{C} \to \mathbf{D}$ is *full* (respectively *faithful*) if for each pair of objects $X, Y \in \mathbf{C}$, the function

$$F : \operatorname{Hom}_{\mathbf{C}}(X; Y) \to \operatorname{Hom}_{\mathbf{D}}(F(X); F(Y))$$

is surjective (respectively injective).