

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

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

is surjective (respectively injective).