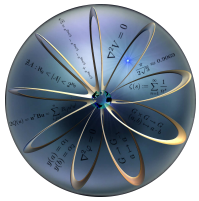

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additive functor

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Let $\mathcal{A}$ and $\mathcal{B}$ be ab-categories. A functor $F : \mathcal{A} \to \mathcal{B}$ is called an *additive functor* if, for any objects A, B in $\mathcal{A}$, the function

$$F_{(A,B)} : \hom(A, B) \to \hom(F(A), F(B))$$

given by $F_{(A,B)}(f) = F(f)$ is a group homomorphism. In other words, if $f, g : A \to B$ are two morphisms with common domain A and codomain B, then

$$F(f + g) = F(f) + F(g).$$

For example, the hom functor $\hom(A, -)$ where A is an object in an abelian category, is additive.

Remark. It can be shown that any exact functor between abelian categories is additive.

More to come...