

Nevertheless, the category in which objects are sets and morphisms functions between sets provides an important example. It is denoted by

$$\mathit{Set}$$

For a morphism  $f$  with  $\mathit{dom}(f) = A$  and  $\mathit{cod}(f) = B$  one often uses the notation

$$f : A \rightarrow B$$

But remember, although this even more resembles the notation of functions,  $f$  is only in specific cases a function. The only thing which morphisms are ensure to have in common with functions, is associative composition and a special morphism which behaves like identity (see its definition).

The class of all morphisms is denoted by

$$\mathit{Hom}(A, B)$$

Likewise, the class of all morphisms in a category  $C$  is denoted by

$$\mathit{Hom}(C)$$