

Category Theory

Exercise Sheet 2

Lecture Homepage: <https://www.math.cit.tum.de/algebra/lehre/sommersemester-2022/ss2022-category-theory/>

Exercise 1. Find several examples of functors from some of the other lectures which you are attending, and show that these satisfy the definition of a functor.

Exercise 2. Show that any functor sends isomorphisms to isomorphisms.

Exercise 3. Given categories C and D , what is the difference between a functor $C^{\text{op}} \rightarrow D$ and a functor $C \rightarrow D^{\text{op}}$? What is the difference between a functor $C \rightarrow D$ and a functor $C^{\text{op}} \rightarrow D^{\text{op}}$?