

INTRODUCTION TO CATEGORICAL TERMS AND NOTATION

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A lot of modern mathematics, especially areas such as algebra and topology, make use of a lot of notation and terminology from category theory. This “class“ will consist of 1-2 lectures introducing some of this notation and terminology, with an emphasis on understanding commutative diagrams. The aim is to make it easier for people to understand the other classes at this camp, of which I suspect several will implicitly use what I plan to discuss.

Prerequisites. Formally not a lot, but most examples require familiarity with things like vector spaces, groups, rings and topological spaces. The more of these you recognise, the more motivated the ideas will seem to you. Understanding all of the examples is not required for it to be a good idea to go to the lecture(s).

”Anti-Prerequisites”. If you know what a functor is, how monomorphisms and epimorphisms are defined in arbitrary categories, and what the diagram below illustrates, you probably don’t need to go to my lecture

$$\begin{array}{ccccc} \ker f & \xleftarrow{\iota} & B & \xrightarrow{f} & C \\ & \swarrow \exists! h & \uparrow \forall g & \searrow 0 & \\ & & A & & \end{array}$$