Preview

The machinery developed in §6 allows to derive left or right exact functors. Deriving the left exact Hom-functors we obtained their right derived functors Ext." In this chapter we will ~~need~~ meet the right exact counterpart of Hom, the tensorproduct. Its left derived functors are the Tor functors.

What means "counterpart"? There is a precise connection between these two functors; they form what is called an adjoint pair. This concept will be formulated and it will be shown that in such an adjoint pair, always one functor is right exact and the other one is left exact.

Once this is clarified, we construct the tensorproduct and check if is adjoint to Hom. Since adjoints determine each other uniquely (if they exist), this also tell us that the tensor product is the unique counterpart of Hom in this sense.