R. Kaufmann
Math 598, Spring 2013

Homework 1

[GM] S.I. Gelfand and Yu. I. Manin. *Methods of homological algebra*

Problems

Problem 1: Write out the proof that an equivalence of categories is given by a fully faithful, essentially surjective functor and vice–versa.

Problem 2: Read and understand [GM] p91/92 23. Definition/Lemma p91 and 24. Adjoint morphisms. For 24 write out the morphisms where G is the forgetful functor from Groups to Sets and F is the free group functor going the other way around.

Problem 3: Read and understand the definition of a monoidal category.