

Ma502: Metamathematics I
0th homework set, due friday, august 31st.

Bring your solutions to class on friday, or slide them under the door of SEO716.

1. Consider a symbol set S containing one binary function symbol B and nothing else. Consider two S -structures, A and M , whose universe is the natural numbers \mathbb{N} . In A , B is interpreted to be the usual addition; in M , it is interpreted to be the usual multiplication. Which of these structures has a non-trivial (i.e. non-identity) S -automorphism (i.e. S -isomorphism to itself)?

2. Give a "natural" symbol set for talking about groups, such that our definition of *substructure* would correspond to the usual definition of *subgroup* from algebra.

3. Ask an interesting question and try to answer it.