Preview of Lecture 02.10

On 02.10, we will conclude the proof of the Small Model Theorem. We will then proceed to analyze the expressive power of monadic schemata using the tools developed in the proof. Recall the notions deployed in Problem Set 2, but now upgraded to apply to monadic schemata.

- A list of pure monadic schemata is *succinct* if and only if no two schemata on the list are equivalent.

- A pure monadic schema *implies a list of schemata* if and only if it implies every schema on the list.

- The *power* of a pure monadic schema is the length of a longest succinct list of pure monadic schemata it implies.

We will fix a vocabulary of monadic predicate letters, for example F and G, and will use our results about monadic similarity to answer questions such as:

- "for which numbers n is there a schema S whose power is n?"

- "what is the power of the schema $(\forall x)(Fx \oplus Gx)$?"

- "what is the length of a longest succinct list of pure schemata satisfied by exactly 4 structures with universe of discourse $\{1, 2, 3, 4\}$?"