Math 27800 / CS 27800, Winter 2024: Assignment 7
Due Friday, March 1st

Problem 2 is a "take-home exam" problem, to be worked out individually.

1. Do Problem 12.1.3 in Avigad.

2 (take-home exam problem). Show that if T is a consistent, ω-complete theory (as defined in assignment 4) in the language of $\mathfrak{N}$ and $Q \subseteq T$, then $T = \operatorname{Th} \mathfrak{N}$. *[Hint: Proceed by induction on the quantifier complexity of formulas to show that every sentence true in $\mathfrak{N}$ is provable in T.]*

3. Do Problem 12.2.2 in Avigad.

4. Do Problem 12.3.1 in Avigad. (You can use the Fixed-Point Lemma, which we will prove in class.)