Math260 - Introduction to Mathematical Logic
Fall 2007 – Winter 2008
Instructor: Sam Buss

Homework #8. Due Thursday, March 6, 2008.

1. Prove that $I\Sigma_1 \vdash I\Pi_1$.

2. Prove that $I\Sigma_1 \vdash L\Sigma_1$. (“L” = Least number principle, or Minimization axioms.)

3. Prove that if $T$ is axiomatizable, then $T$ has a primitive recursive set of axioms.

4. Prove that if $T$ has an r.e. set of axioms, then $T$ has a recursive set of axioms. (That is, that $T$ is axiomatizable.)

Suggestion: You may wish to combine problems 3 and 4 and just prove directly that if $T$ has a r.e. set of axioms then $T$ has a primitive recursive set of axioms.