

Homework 3

Large Cardinals 2

1. Prove that for every $\alpha \geq 1$, there is a subset A of the Baire space ω^ω that is Σ_α^0 but not Π_α^0 . (Σ_α^0 and Π_α^0 are subclasses of the Borel Hierarchy.)
2. Prove that every Borel set is analytic.
3. Review the proof of the following theorem: Every Borel set is either countable or contains a perfect subset.