

Lecture #17: Applying the Arithmetic Hierarchy

What Will Happen During the Lecture

Remember... You Had Homework!

Students were asked to have worked through a set of notes before this first lecture:

- Lecture Notes — “Applying the Arithmetic Hierarchy”

Of course, you may attend the lecture presentation if you have not worked through this material ahead of time — but it will not be repeated for you during the lecture presentation.

Topic To Be Discussed

Consider the set

$$\text{Empty} = \{n \in \mathbb{N} \mid W_n = \emptyset\}.$$

Two different approaches will be used to identify a class C in the Arithmetic Hierarchy (so that either $C = \Sigma_n$, $C = \Pi_n$, or $C = \Delta_n$ for some number $n \in \mathbb{N}$) such that $\text{Empty} \in C$.