

## Recursion Theory

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Your solutions will be returned during the lecture on July, 30<sup>th</sup>.

### Problem 1: Turing Jump

**4 Points**

Show  $\emptyset' \equiv_T K$ .

### Problem 2: Arithmetic Hierarchy

**2 Points**

Place the following sets in the arithmetic hierarchy.

- a)  $A = \{x \in \mathbb{N} \mid W_x = \{3, 7, 2013\}\}$ .
- b)  $B = \{x \in \mathbb{N} \mid W_x \equiv_T K\}$ .