Lecture #13: First Undecidable and Unrecognizable Languages
Questions for Review

1. Describe the languages TM and TM+I. Are they recognizable? Are they decidable?

2. Describe the language A_{TM}. Is this language recognizable? Is this decidable?

3. OK, OK... the language A_{TM} was proved to be **undecidable** in Lecture #13 — and this the first language proved to undecidable, so far, in this course.

   What **proof technique** was used to prove this?

4. Now consider the **complement** A_{TM}^{C} of A_{TM}. Is *this* language decidable? Is it recognizable?

5. OK, OK... the language A_{TM}^{C} was proved to be **unrecognizable** in Lecture #13 — and this is the first language proved to be unrecognizable, in this course.

   What **proof technique** was used to prove this?