

## In-class Practice 23: Undecidability

State whether the following are true, false, or unknown.

1. The following is recursive: the set of all encodings of TMs that do not accept their own encoding.
2. The set of all Java programs is countable
3. The halting problem for PDAs is undecidable
4. The set of all finite subsets of the reals is uncountable
5. If  $L$  is the language of a nondeterministic TM, then there is a deterministic TM for  $L$ .