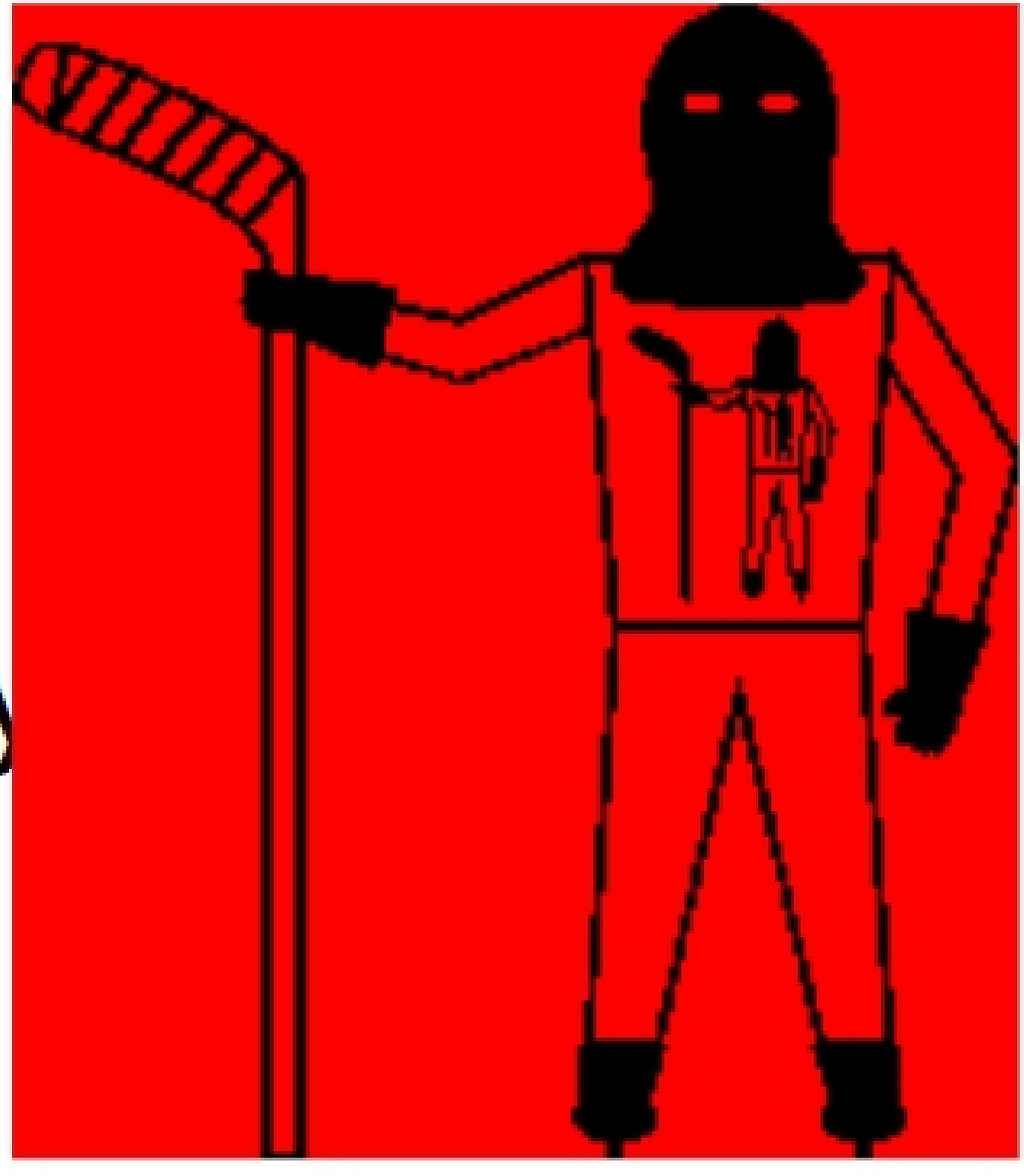
Class 24: Computability



Halting Problems Hockey Team Logo

CS150: Computer Science
University of Virginia
Computer Science

David Evans
http://www.cs.virginia.edu/evans

Menu

- Review:
  - Gödel's Theorem
  - Proof in Axiomatic Systems
- Computability:

  Are there some problems that it is impossible to write a program to solve?

Gödel's Proof

G: This statement of number theory does not have any proof in the system of *PM*.

If *G* were provable, then PM would be inconsistent.

If *G* is unprovable, then PM would be incomplete.

PM cannot be complete and consistent!