College of Computer & Information Science
Northeastern University
CSG714: Theory of Computation

Spring 2009
Handout 7
2 February 2009

Problem of the Week − 4

Decidability and Recognizability

Let L be the following language.

$\{\langle M, w \rangle : M$ is a DTM and does not enter all of its non-halting states during the computation on $w\}$.

Determine which of the three categories does L lie in: (A) decidable; (B) undecidable but recognizable; (c) unrecognizable.