

Homework 11

CS 4313 – Spring 2003
Tom Bylander, Instructor

assigned April 16, 2003
due date April 23, 2003

1. (40 pts.) As a shorthand for regular expressions, let Σ_a match any single alphabetic letter. Let Σ_p match any single punctuation symbol. Assume that matching letters is case-insensitive, font-insensitive, etc. Write regular expressions for the following:
 - (a) Write a regular expression that matches “Aggies” and any variation of “Aggies” produced by adding punctuation symbols between the letters.
 - (b) Write a regular expression that matches “Aggies” and any variation of “Aggies” produced by changing, adding, or deleting a single letter.
2. (60 pts.) Determine whether the following problems are decidable or undecidable and prove your answer.
 - (a) Given a Turing machine M and a string w as input for M , does M ever read a blank?
 - (b) Given a Turing machine M and a string w as input for M , does M ever write a blank?
 - (c) Given a Turing machine M , is $L(M)$ a regular grammar?