CS 4114

Homework Exercise 3

Given: February 9, 2000  Due: February 18, 2000

The point value of each problem is shown in [ ]. Your solutions may be created in
LaTeX. Your solutions must be created electronically and may be submitted in printed
form (preferred) or electronically as a postscript or PDF file attached to email sent to
cs4114@courses.cs.vt.edu.

For every solution submitted, a careful justification of your answer is required. Such a
justification will typically consist of a proof or appeal to some theorem proved in class or in
the book. It may also consist of explicitly carrying out the steps of an algorithm presented
in class. The quality of your technical writing will be evaluated, so write carefully and
completely. A solution, correct or incorrect, without a justification is worth no credit.

The assignment must be delivered to the instructor at McBryde 638 or received at
the cs4114 account by 12:00 noon on February 18, 2000. If sent by email, the sub-
ject line should be “Solutions to Homework Exercise 3”. NO UNEXCUSED LATE
HOMEWORKS WILL BE ACCEPTED. See syllabus for details.

If you submit a first version of your solutions and then decide to submit a revised version
BEFORE THE DEADLINE, you may do so as follows. Before you send the revised
version, send email to the GTA, Mr. Bao (xbao@csgrad.cs.vt.edu), and send a copy to
the course account (cs4114@courses.cs.vt.edu) with the subject line “Resubmission of
Homework Exercise 3”. Explain briefly in the email what revisions you made. Immedi-
ately send the revision to cs4114@courses.cs.vt.edu with the subject line “Solutions
to Homework Exercise 3: Resubmission”.


[10] 2. Chapter 3, exercise 6 (d) and (e). Explain how you arrived at your answers, but
do not prove that the languages are equal.

prove that the grammar actually generates the given language.
[10] 4. Chapter 3, exercise 14 (a) and (c). Explain how you arrived at your regular expressions, but do not prove that the regular expressions actually represent the given regular languages.