COS 487, October 1, 2003
Due: October 8, 2003

## Homework Set 3

*Problem 1:* 2.3 (In the problem statement, as usual all upper-case letters denote variables, and lower-case letters denote terminals. The first line of the substitution rules involves variable $R$, which should not be confused with the notation $R$ in the definition of CFG denoting the set of all substitution rules.)

*Problem 2:* 2.6 (b)(d)

*Problem 3:* 2.7 (for (b)(d) only)

*Problem 4:* 2.13

*Problem 5:* Convert the following CFG $G = (V, \Sigma, R, S)$ to an equivalent PDA. (You should use either the conversion procedure given in class, or the one given in the textbook.)

$$V = \{S, Z, X, A\}, \Sigma = \{0, 1\}$$

and $R$ consists of the substitution rules:

$$S \to ZX,\ X \to AA,\ A \to ZS, Z \to 0,\ A \to 1$$

*Problem 6:* 2.25

*Problem 7:* 2.26