Homework Set #7

Assigned: Tuesday, 4/17               Due: Thursday, 5/3  (start of lecture)

This assignment covers textbook material in Chapter 5.

Note: Refer to course web site for homework policies.
Remember to attach signed honor statement.

1. (20 points) Textbook Exercise 5.1 on p. 211.

2. (20 points) Textbook Exercise 5.2 on p. 211.

3. (20 points) Is \( E_{CFG} \in \Sigma_1 \)? Justify your answer.

4. (20 points) Textbook Problem 5.12 on p. 211.

5. (20 points) For each instance below of the PCP, either demonstrate a match or prove that a match is not possible:

   a) \( \left\{ \left[ \begin{array}{c} cb \\ b \end{array} \right], \left[ \begin{array}{c} a \\ c \end{array} \right], \left[ \begin{array}{c} ac \\ cab \end{array} \right], \left[ \begin{array}{c} b \\ cb \end{array} \right] \right\} \)

   b) \( \left\{ \left[ \begin{array}{c} b \\ bb \end{array} \right], \left[ \begin{array}{c} baa \\ ba \end{array} \right], \left[ \begin{array}{c} b \\ ac \end{array} \right], \left[ \begin{array}{c} ac \\ c \end{array} \right], \left[ \begin{array}{c} b \\ ba \end{array} \right], \left[ \begin{array}{c} c \\ ac \end{array} \right] \right\} \)