Today Reducibility and Post Correspondence Problem. Ch. 5.
Next class Time complexity basics and the class P. §§ 7.1–2.

1. List the members of your group below. Underline your name.

2. Solve the following instances of the Post Correspondence Problem. (The first is from Post's original paper describing the problem,[1] which is very readable.)

   (a) $\left\{ \left[\frac{bb}{b}\right], \left[\frac{ab}{ba}\right], \left[\frac{b}{bb}\right] \right\}$

   (b) $\left\{ \left[\frac{ab}{abab}\right], \left[\frac{b}{a}\right], \left[\frac{aba}{bb}\right] \left[\frac{aa}{bb}\right] \right\}$

   (c) $\left\{ \left[\frac{bba}{b}\right], \left[\frac{b}{a}\right], \left[\frac{a}{bba}\right] \right\}$

3. Briefly comment on the significance of Theorem 5.30 to program optimization.

[1] Emil L. Post, "A variant of a recursively unsolvable problem," *Bulletin of the American Mathematical Society* 52 (1946).

4. Prove or disprove: All subsets of $\{\mathtt{0}\}^*$ are decidable.

5. Prove or disprove: The PCP is decidable if all its strings are elements of $\{\mathtt{0}\}^*$.