

**Today** Catch-up and review.

**Next class** Midterm exam.

**Reminders** Newsgroup.

1. List the members of your group below. Underline your name.
  
2. For each of the following languages, provide a context-free grammar and a brief justification of its correctness.
  - (a)  $L_1 = \{ww \mid w \in \{a, b\}^* \text{ and } |w| > 3\}$
  - (b)  $L_2 = \{ww \mid w \in \{a, b\}^* \text{ and } |w| \equiv 2 \pmod{4}\}$
  - (c)  $L_3 = \{www \mid w \in \{a, b\}^* \text{ and } |w| < 3\}$

3. Provide informal and formal descriptions of pushdown automata for each of the languages of Question 2.

4. (extra) Prove or disprove the regularity of each of the languages of Question 2.