

Today Review.

Next class Midterm exam 2; all material to date, with emphasis on more recent topics.

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

2. Using the tabular representation used in class, depict the operation of the CYK algorithm on the input strings **aaab** and **abbbaab**, and the following grammar. [Hint: Convert to Chomsky normal form.]

$$\begin{aligned} S &\rightarrow AaB \\ A &\rightarrow a \mid aa \mid Ba \\ B &\rightarrow b \mid bbb \mid A \end{aligned}$$

3. Reduce the following instance of SAT to VERTEX-COVER using the textbook's method. Depict corresponding solutions to the instances, or explain why none exist.

$$(x \vee y \vee \bar{z}) \wedge (\bar{x} \vee y \vee z) \wedge (x \vee \bar{y} \vee z) \wedge (\bar{x} \vee \bar{y} \vee \bar{z})$$

4. Repeat Question 3 but reduce to SUBSET-SUM.