

Today Context-free languages. §§ 2.{0, 1}.

Next class Pushdown Automata § 2.2.

1. Write your name below.

2. Consider the the grammar G_1 :

$$E \rightarrow E+T \mid E-T \mid T$$

$$F \rightarrow (E) \mid i$$

$$T \rightarrow F \mid T/F \mid T*F$$

For each of the following strings, either provide a leftmost derivation of the string from S or explain why the string is not in $L(G_1)$: $i+i+i/i*i$; $i-ii*i$.

3. Is the grammar G_1 ambiguous? Are its parse trees consistent with the usual interpretation of arithmetic symbols and expressions? Justify your answers.

4. Convert the grammar G_1 of Question 2 to Chomsky normal form. Show intermediate grammars.