

Name _____

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6.1120 Fall 2025

Miniquiz #5

5 Minutes

Eliminate left recursion from these grammars.

1. The following grammar is left-associative. Provide a new grammar that specifies the same language but is right-associative.

$S \rightarrow a$
 $S \rightarrow S \text{ ', } a$

2. The following grammar is ambiguous.

$Int = [0-9]$
 $E \rightarrow Int$
 $E \rightarrow E \text{ '+' } E$

a) Show two different parse trees for the string $1 + 2 + 3$.

b) Provide a new unambiguous grammar that still defines the same language.