

CSI 350 — Theory of Computation, Fall 2005

Quiz #5 - October 10, 2005

Name & Honor Code: _____

Solve the following questions given $\Sigma = \{a, b\}$ and the grammar G:

$G \rightarrow HH$

$H \rightarrow a|b|e$

1. Name two strings derived by G.

$\epsilon, a, b, aa, ab, ba, bb$

2. Name two strings that are not derived by G.

aaa, bbb, \dots

3. Show the parse tree for the string $abba$.

It does not exist because
 $abba \notin G$

4. Describe the language of G using layman's terms. Then, describe it formally using formal notation.

The language of G includes any string with a length less than 3.

$$L(G) = \{w \mid w \text{ has length } 0, 1 \text{ or } 2\}$$