GFC Handout

Name _____

Consider the following grammar.

V = **while**, ; , **if**, (,), {, }, while_statement, if_statement, expression, statement
S = statement
R, the substitution rules, are as follows,,,
statement -> statement; statement | while_statement | if_statement | expression | ε

while_statement -> while (expression) { statement }

if_statement -> if (expression) { statement }

Derive two strings from this grammar which involve at least 3 substitutions. In addition to the strings, provide the parse tree.

i)

ii)

Using the same grammar, tokenize and generate a parse tree for the following block of code.

```
if(expression) {
  statement;
}

statement;
while (expression) {
  statement;
}
```

List the tokens vertically, one per line.

Parse tree.