

CSCE 330 Fall 2011
QUIZ 2
Assigned Tuesday, 2011-08-30

Give a leftmost derivation of {b := 9;} from the following EBNF grammar.

```
<program> -> {<statement>*}
<statement> -> <assignment> | <conditional> | <loop>
<assignment> -> <identifier> := <expr>;
<conditional> -> if <expr>{<statement>+} | if <expr>{<statement>+}else{<statement>+}
<loop> -> while <expr> {<statement>+}
<expr> -> <identifier> | <number> | (<expr>) | <expr><operator><expr>
<operator> -> + | - | * | / | = | <> | < | > | <= | >=
<identifier> -> <letter> <ld>*
<ld> -> <letter>|<digit>
<number> -> <digit>+
<letter> -> a | b | c | ... |z
<digit> -> 0 | 1 | ... | 9
```

Answer: <program> => {<statement>} => {<identifier> := <expr>;} =>
=> {<letter> := <expr>;} => {b := <expr>;} =>
{b := <number>;} => {b := <digit >;} => {b := 9;}