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Homework 5

1. Remove left recursion
S -> BAX | aX
X -> **ε |** aX | BaX
A -> aa
B -> bY
Y -> **ε** | bY | aY

2.
S -> abCS | abC | AC this grammar is not LL(1) because abCS and abC so that K>1, or the left recursion on A.
-Write as LL(1):
S -> abCX | AC ----------> K = 1
X -> S | **ε** ----------> k = 1
A -> bY ----------> k = 0
Y -> **ε** | aY ----------> k = 1
C -> cC | D ----------> k = 1
D -> dd ----------> k = 0

3. Write the pseudocode for the complete recursive descent parser.

```
parser () {
 tk = scanner()
 S()
 if (tk == EOFTK) That is okay
 else print the error(".....")
}
S() {
 if (tk == a) {   // aS
  tk = scanner()
  S()
 }
 else if (tk == b) {   // bAc
  tk = scanner()
  A()
  if(tk == c)
   tk = scanner()
  else print error message( ".....")
 else if(tk == c) {    // c
  tk = scanner()
 }
 else print error message(".....")
```

```
}

A() {
 if (tk == a){  //aBa
  tk = scanner()
  B()
  if(tk == a)
   tk = scanner()
  else print error message(“....”)
 }
 else   // ε
 }

B() {    // bb
 if (tk != b)
  print error message(“....”)
 tk = scanner()
 if(tk != b)
  print error message(“....”)
 tk = scanner()
}
```