1. Perform the pairwise disjointness test for the following grammar rules.

   b. $B \rightarrow aB \mid bA \mid aBb$

      First(aB) = a
      First(bA) = b
      First(aBb) = a

      • They are intersected; therefore the rule fails the test.

   c. $C \rightarrow aaA \mid b \mid caB$

      First(aaA) = a
      First(b) = b
      First(caB) = c

      • They are not intersected; therefore the rule passes the test.

3. Show a trace of the recursive descent parser given in Section 4.4.1 for the string \(a + b \ast c\).

   Next token is: 11 Next lexeme is a
   Enter <expr>
   Enter <term>
   Enter <factor>
   Next token is: 21 Next lexeme is +
   Exit <factor>
   Exit <term>
   Next token is: 11 Next lexeme is b
   Enter <term>
   Enter <factor>
   Next token is: 23 Next lexeme is *
   Exit <factor>
   Next token is: 11 Next lexeme is c
   Enter <factor>
   Next token is: -1 Next lexeme is EOF
   Exit <factor>
   Exit <term>
   Exit <expr>