

Name/PID: \_\_\_\_\_

COMP 520 WA2 SP22

## COMP 520: Compilers

### Written Assignment 2

Assigned: Thu Jan 20

Due: Tue Jan 25

**(5 points each, 15 total)** For each of the three EBNF grammars (one per page)

1. Determine the Nullable, Starter, and Follow sets for the grammar nonterminals.
2. Identify all choice points in the grammar, and for each choice point determine the Predict sets.
3. Determine whether the grammar meets the LL(1) condition.

In these grammars, capital letters represent nonterminals, lowercase letters represent terminals, and  $\epsilon$  is the empty sequence. Write your solution for each grammar on the page with the grammar.

- (a)  $S ::= A B c$   
 $A ::= a B \mid \epsilon$   
 $B ::= b \mid \epsilon$

(b)  $S ::= A \$$   
 $A ::= a A x \mid B$   
 $B ::= b B x \mid D$   
 $D ::= d D x \mid f$

(c)  $S ::= A c$   
 $A ::= a A^* b \mid b$