

## CSE 401 - LR Parsing Worksheet - Week 3

### Problem 1

- a. Using the technique shown in lecture, construct the LR(0) state machine for this grammar. Remember to show the set of items that correspond to each state, including both any initial items and the resulting closure.

0.  $S' ::= S \$$
1.  $S ::= a Z$
2.  $S ::= b$
3.  $Z ::= a$
4.  $Z ::= b S$



**Problem 2**

- a. Using the technique shown in lecture, construct the LR(0) state machine for this grammar. Remember to show the set of items that correspond to each state, including both any initial items and the resulting closure.

0.  $S' ::= S \$$
1.  $S ::= a X a$
2.  $S ::= b X$
3.  $X ::= c$
4.  $X ::= S c$



**Problem 3**

- a. Using the technique shown in lecture, construct the LR(0) state machine for this grammar. Remember to show the set of items that correspond to each state, including both any initial items and the resulting closure.

0.  $S' ::= S \$$
1.  $S ::= ( E )$
2.  $E ::= E \&\& V$
3.  $E ::= V$
4.  $V ::= ! ( E )$
5.  $V ::= a$

