1. (25 pts) Consider the grammar
   \[ S ::= Aa | bAc | Bc | bBa \]
   \[ A ::= d \]
   \[ B ::= d \]

   (a) Show that the grammar is not LALR(1) (Hint: Construct the LALR states and show any potential reduce-reduce conflict. Recall that LALR(1) (look-ahead LR) states can be obtained by merging LR(1) states with the same core (i.e., \( \alpha \)). SHOW YOUR WORK.)