

# Mini Quiz 9

Name: \_\_\_\_\_

Kerberos: \_\_\_\_\_

Consider the following grammar:

$P ::= [ E ] \$$   
 $E ::= T \mid T, E$   
 $T ::= a$

Q1: Left-factor the above grammar:

$P ::= [ E ] \$$   
 $E ::= T E'$   
 $E' ::= " \mid , E'$   
 $T ::= a$

Q2: Name two ways of determining which production to try for a hand-coded recursive descent parser:

- \* Backtracking
- \* Predictive parsing

Consider the following grammar:

$P ::= E ( C )$   
 $E ::= A B$   
 $A ::= a \mid \varepsilon$   
 $B ::= [ b ] \mid \varepsilon$   
 $C ::= c \mid \varepsilon$

$T \in \text{First}(T)$   
 $\text{First}(S) \subseteq \text{First}(S\beta)$   
 $\text{NT derives } \varepsilon \text{ implies } \text{First}(\beta) \subseteq \text{First}(\text{NT}\beta)$   
 $\text{NT derives } S\beta \text{ implies } \text{First}(S\beta) \subseteq \text{First}(\text{NT})$

Q3: What is  $\text{First}(P)$ ?

a, [, (