

C1) This is a recursive descent parser. Write the grammar from this parser.

```

block()
    match('{')
    stmt()
    match('}')

stmt()
    if( currenttoken == 'id')
        stmt1()
        stmt()

stmt1()
    match('id')
    match('=')
    expr()
    match(';')

expr()
    match('id')
    exprs()

exprs()
    if( currenttoken == '+')
        match('+')
        exprs()

```

$block \rightarrow \{ \text{stmt} \}$
 $stmt \rightarrow stmt1 \text{ stmt} \mid \lambda$
 $stmt1 \rightarrow id = \text{expr} ;$
 $\text{expr} \rightarrow id \text{ exprs}$
 $\text{exprs} \rightarrow + \text{exprs} \mid \lambda$

C2) Given this grammar, compute First and Follow set, draw the parsing table

```

decl = ID decl2
decl2 = ( formal ) stmt | [ NUM ]
formal = ID formals | empty
formals = , formal | empty

```

	First	Follow
decl	ID	\$
decl2	([\$
formal	ID λ)
formals	, λ)

1. $decl \rightarrow ID \text{ decl2}$
2. $decl2 \rightarrow (\text{ formal }) \text{ stmt}$
3. $decl2 \rightarrow [\text{ NUM }]$
4. $\text{formal} \rightarrow ID \text{ formals}$
5. $\text{formal} \rightarrow \lambda$
6. $\text{formals} \rightarrow , \text{ formal}$
7. $\text{formals} \rightarrow \lambda$

	ID	()	[,	\$
decl	1					
decl2		2		3		
formal	4		5			
formals			7		6	