

```

<exp> ::= <exp> <addop> <term> | <term>
<addop> ::= + | -
<term> ::= <term> <mulop> <factor> | <factor>
<mulop> ::= *
<factor> ::= ( <exp> ) | num

```

STEP 1: REMOVE ALTERNATIONS '|' (accept for some terminals) and list the terminals and nonterminals. This is done for clarity

list of productions without alternation:	STEP 2: COMPUTE THE FIRST SET
0) $\langle S \rangle ::= \langle \text{exp} \rangle \$$	$\langle + \rangle$
1) $\langle \text{exp} \rangle ::= \langle \text{exp} \rangle \langle \text{addop} \rangle \langle \text{term} \rangle$	$\langle - \rangle$
2) $\langle \text{exp} \rangle ::= \langle \text{term} \rangle$	$\langle * \rangle$
3) $\langle \text{addop} \rangle ::= + \mid -$	$\langle ( \rangle$
4) $\langle \text{term} \rangle ::= \langle \text{term} \rangle \langle \text{mulop} \rangle \langle \text{factor} \rangle$	$\langle ) \rangle$
5) $\langle \text{term} \rangle ::= \langle \text{factor} \rangle$	$\langle \text{num} \rangle$
6) $\langle \text{mulop} \rangle ::= *$	
7) $\langle \text{factor} \rangle ::= ( \langle \text{exp} \rangle )$	$\langle \text{exp} \rangle$
8) $\langle \text{factor} \rangle ::= \text{num}$	$\langle \text{addop} \rangle$
	$\langle \text{term} \rangle$
	$\langle \text{mulop} \rangle$
	$\langle \text{factor} \rangle$

STEP 3: COMPUTE THE FOLLOW SET. Not really needed because there are no  $\epsilon$ , but we do it here for practice.

- 1)  $\langle \text{exp} \rangle ::= \langle \text{exp} \rangle \langle \text{addop} \rangle \langle \text{term} \rangle$
- 2)  $\langle \text{exp} \rangle ::= \langle \text{term} \rangle$
- 4)  $\langle \text{term} \rangle ::= \langle \text{term} \rangle \langle \text{mulop} \rangle \langle \text{factor} \rangle$
- 5)  $\langle \text{term} \rangle ::= \langle \text{factor} \rangle$
- 7)  $\langle \text{factor} \rangle ::= ( \langle \text{exp} \rangle )$

	First	prod 1	prod 2	prod 4	prod 5	prod 7	Follow
$\langle \text{exp} \rangle$	(,num						
$\langle \text{addop} \rangle$	+, -						
$\langle \text{term} \rangle$	(,num						
$\langle \text{mulop} \rangle$	*						
$\langle \text{factor} \rangle$	(,num						

#### THE FIRST SET

<exp>            (,num

<addop>        +,-

<term>           (,num

<mulop>        \*

<factor>        (,num

Step 4. Compute the predict sets.

1) <exp> ::= <exp> <addop> <term>

2) <exp> ::= <term>

3) <addop> ::= + | -

4) <term> ::= <term> <mulop> <factor>

5) <term> ::= <factor>

6) <mulop> ::= \*

7) <factor> ::= ( <exp> )

8) <factor> ::= num