

exp \rightarrow num | exp op exp | (exp)

op \rightarrow + | - | * | /

num \rightarrow 0|1|2|3|4|5|6|7|8|9

LL(1) Grammar

1	goal \rightarrow expr
2	expr \rightarrow term expr2
3	expr2 \rightarrow + term expr2
4	- term expr2
5	ϵ
6	term \rightarrow factor term2
7	term2 \rightarrow * factor term2
8	/ factor term2
9	ϵ
10	factor \rightarrow 0 1 2 3 4 5 6 7 8 9
11	(expr)

FIRST

1	FIRST(#1) = { 0 1 2 3 4 5 6 7 8 9, (}
2	FIRST(#2) = { 0 1 2 3 4 5 6 7 8 9, (}
3	FIRST(#3) = { + }
4	FIRST(#4) = { - }
5	FIRST(#5) = { ϵ }
6	FIRST(#6) = { 0 1 2 3 4 5 6 7 8 9, (}
7	FIRST(#7) = { * }
8	FIRST(#8) = { / }
9	FIRST(#9) = { ϵ }
10	FIRST(#10) = { 0 1 2 3 4 5 6 7 8 9 }
11	FIRST(#11) = { (}

FIRST+

1	$\text{FIRST}+(\#1) = \text{FIRST}(\#1) = \{ 0 1 2 3 4 5 6 7 8 9, (\}$
2	$\text{FIRST}+(\#2) = \text{FIRST}(\#2) = \{ 0 1 2 3 4 5 6 7 8 9, (\}$
3	$\text{FIRST}+(\#3) = \text{FIRST}(\#3) = \{ + \}$
4	$\text{FIRST}+(\#4) = \text{FIRST}(\#4) = \{ - \}$
5	$\text{FIRST}+(\#5) = \text{FIRST}(\#5) \cup \text{FOLLOW}(\text{expr2}) = \{ \epsilon,) , \text{EOF} \}$
6	$\text{FIRST}+(\#6) = \text{FIRST}(\#6) = \{ 0 1 2 3 4 5 6 7 8 9, (\}$
7	$\text{FIRST}+(\#7) = \text{FIRST}(\#7) = \{ * \}$
8	$\text{FIRST}+(\#8) = \text{FIRST}(\#8) = \{ / \}$
9	$\text{FIRST}+(\#9) = \text{FIRST}(\#9) \cup \text{FOLLOW}(\text{term2}) = \{ +, - ,) , \epsilon, \text{EOF} \}$
10	$\text{FIRST}+(\#10) = \text{FIRST}(\#10) = \{ 0 1 2 3 4 5 6 7 8 9 \}$
11	$\text{FIRST}+(\#11) = \text{FIRST}(\#11) = \{ (\}$

FOLLOW

1	$\text{FOLLOW}(\text{goal}) = \{ \text{EOF} \}$
2	$\text{FOLLOW}(\text{expr}) = \text{FOLLOW}(\text{goal}) = \{) , \text{EOF} \}$
3	$\text{FOLLOW}(\text{expr2}) = \text{FOLLOW}(\text{expr}) = \{) , \text{EOF} \}$
6	$\text{FOLLOW}(\text{term}) = \{ +, - \} \cup \text{FOLLOW}(\text{expr2}) = \{ +, - ,) , \text{EOF} \}$
7	$\text{FOLLOW}(\text{term2}) = \{ +, - ,) , \text{EOF} \}$
10	$\text{FOLLOW}(\text{factor}) = \{ * , / \} \cup \text{FOLLOW}(\text{term2}) = \{ +, - , * , / ,) , \text{EOF} \}$

	<i>0/1../9</i>	<i>+, -</i>	<i>*, /</i>	<i>(</i>	<i>)</i>	<i>EOF</i>
<i>goal</i>	expr	error	error	expr	error	error
<i>expr</i>	term expr2	error	error	term expr2	error	error
<i>expr2</i>	error	term expr2	error	error	ϵ	ϵ
<i>term</i>	factor term2	error	error	factor term2	error	error
<i>term2</i>	error	ϵ	factor term2	error	ϵ	ϵ
<i>factor</i>	(do nothing)	error	error	(expr)	error	error