

## Gramatika bez výrazů

		Predict
1. <prog>	→ <declarations> <body>	{var, begin}
2. <declarations>	→ <b>var</b> <declaration> <decl-list>	{var}
3. <declarations>	→ $\epsilon$	{begin}
4. <declaration>	→ <b>id</b> : <type> ;	{id}
5. <decl-list>	→ <declaration> <decl-list>	{id}
6. <decl-list>	→ $\epsilon$	{begin}
7. <body>	→ <b>begin</b> <statements> <b>end</b> .	{begin}
8. <statements>	→ <statement> <st-list>	{begin, readln, write, id, if, while}
9. <statements>	→ $\epsilon$	{end}
10. <st-list>	→ ; <statement> <st-list>	{;}
11. <st-list>	→ $\epsilon$	{end}
12. <statement>	→ <b>begin</b> <statements> <b>end</b>	{begin}
13. <statement>	→ <b>readln</b> ( <b>id</b> <id-list> )	{readln}
14. <statement>	→ <b>write</b> ( <b>expr</b> <expr-list> )	{write}
15. <statement>	→ <b>id</b> := <b>expr</b>	{id}
16. <statement>	→ <b>if</b> <b>expr</b> <b>then</b> <statement> <b>else</b> <statement> .	{if}
17. <statement>	→ <b>while</b> <b>expr</b> <b>do</b> <statement>	{while}
18. <expr-list>	→ , <b>expr</b> <expr-list>	{,}
19. <expr-list>	→ $\epsilon$	{})
20. <id-list>	→ , <b>id</b> <id-list>	{,}
21. <id-list>	→ $\epsilon$	{})
22. <type>	→ <b>integer</b>	{integer}
23. <type>	→ <b>double</b>	{double}
24. <type>	→ <b>string</b>	{string}

	Empty	First	Follow
<prog>	$\emptyset$	{var, begin}	{\$}
<declarations>	{ $\epsilon$ }	{var}	{begin}
<declaration>	$\emptyset$	{id}	{id, begin}
<decl-list>	{ $\epsilon$ }	{id}	{begin}
<body>	$\emptyset$	{begin}	{\$}
<statements>	{ $\epsilon$ }	{begin, readln, write, id, if, while}	{end}
<st-list>	{ $\epsilon$ }	{;}	{end}
<statement>	$\emptyset$	{begin, readln, write, id, if, while}	{;, else, end}
<expr-list>	{ $\epsilon$ }	{,}	{})
<id-list>	{ $\epsilon$ }	{,}	{})
<type>	$\emptyset$	{integer, double, string}	{;}

LL tabulka	begin	end	var	id	if	while	readln	write	;	,	)	integer	double	string
<prog>	1		1											
<declarations>	3		2											
<declaration>				4										
<decl-list>	6			5										
<body>	7													
<statements>	8	9		8	8	8	8	8						
<st-list>		11							10					
<statement>	12			15	16	17	13	14						
<expr-list>										18	19			
<id-list>										20	21			
<type>												22	23	24

\* u ostatních terminálů v LL tabulce je automaticky prázdné políčko

# Zpracování výrazů

Priorita operátorů (všechny mají asociativitu zleva doprava):

1. \* div
2. + -
3. < <= > >=
4. <> =

Gramatika:

1.  $E \rightarrow id$
2.  $E \rightarrow E * E$
3.  $E \rightarrow E \text{ div } E$
4.  $E \rightarrow E + E$
5.  $E \rightarrow E - E$
6.  $E \rightarrow E < E$
7.  $E \rightarrow E <= E$
8.  $E \rightarrow E > E$
9.  $E \rightarrow E >= E$
10.  $E \rightarrow E = E$
11.  $E \rightarrow E <> E$
12.  $E \rightarrow (E)$

	*	div	+	-	<	<=	>	>=	=	<>	(	)	id	\$
*	>	>	>	>	>	>	>	>	>	>	<	>	<	>
div	>	>	>	>	>	>	>	>	>	>	<	>	<	>
+	<	<	>	>	>	>	>	>	>	>	<	>	<	>
-	<	<	>	>	>	>	>	>	>	>	<	>	<	>
<	<	<	<	<	>	>	>	>	>	>	<	>	<	>
<=	<	<	<	<	>	>	>	>	>	>	<	>	<	>
>	<	<	<	<	>	>	>	>	>	>	<	>	<	>
>=	<	<	<	<	>	>	>	>	>	>	<	>	<	>
=	<	<	<	<	<	<	<	<	>	>	<	>	<	>
<>	<	<	<	<	<	<	<	<	>	>	<	>	<	>
(	<	<	<	<	<	<	<	<	<	<	<	=	<	
)	>	>	>	>	>	>	>	>	>	>		>		>
id	>	>	>	>	>	>	>	>	>	>		>		>
\$	<	<	<	<	<	<	<	<	<	<	<	OK	<	OK

\* [\$,\$) je OK protože závorka už nemusí patřit do výrazu a místo toho uzavírá seznam parametrů funkce