PROGRAM 🡪 **program** VAR\_DEFINITIONS; STATEMENTS **end** FUNC\_DEFINITIONS

VAR\_DEFINITIONS 🡪 VAR\_DEFINITION VAR\_DEFINITIONS\_A  
VAR\_DEFINITIONS\_A 🡪 ε | ; VAR\_DEFINITIONS

VAR\_DEFINITION 🡪 TYPE VARIABLES\_LIST

TYPE 🡪 **real** | **integer**

VARIABLES\_LIST 🡪 VARIABLE VARIABLES\_LIST\_A

VARIABLES\_LIST\_A 🡪 ε | , VARIABLE VARIABLES\_LIST\_A

VARIABLE 🡪 id VARIABLE\_A /\* id is a variable name \*/

VARIABLE\_A 🡪 ε | [int\_number]

FUNC\_DEFINITIONS 🡪 FUNC\_DEFINITION FUNC\_DEFINITIONS\_A

FUNC\_DEFINITIONS\_A 🡪 ε | FUNC\_DEFINITION FUNC\_DEFINITIONS\_A

FUNC\_DEFINITION 🡪 RETURNED\_TYPE id (PARAM\_DEFINITIONS) BLOCK

RETURNED\_TYPE 🡪 **void** | TYPE

PARAM\_DEFINITIONS 🡪 ε | VAR\_DEFINITIONS

STATEMENTS 🡪 STATEMENT; STATEMENTS\_A

STATEMENTS\_A 🡪 ε | STATEMENTS

STATEMENT 🡪 id STATEMENT\_B | BLOCK | return STATEMENT\_A

STATEMENT\_A 🡪 ε | EXPRESSION

STATEMENT\_B 🡪 VARIABLE\_A = EXPRESSION | (PARAMETERS\_LIST)

BLOCK 🡪 { VAR\_DEFINITIONS; STATEMENTS }

FUNCTION\_CALL 🡪 id (PARAMETERS\_LIST)

PARAMETERS\_LIST 🡪 ε | VARIABLES\_LIST

EXPRESSION 🡪 id EXPRESSION\_A| int\_number | real\_number

EXPRESSION\_A 🡪 VARIABLE\_A | ar\_op EXPRESSION

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | nullable | First | Follow |
| PROGRAM | - | “program” | EOF |
| VAR\_DEFINITIONS | - | “real” , “integer” | “;”, “)” |
| VAR\_DEFINITIONS\_A | + | “;” | “;”, “)” |
| VAR\_DEFINITION | - | “real” , “integer” | “;”, “)” |
| TYPE | - | “real” , “integer” | “id” |
| VARIABLES\_LIST | - | “id” | “;”, “)” |
| VARIABLES\_LIST\_A | + | “,” | “;”, “)” |
| VARIABLE | - | “id” | “=”, “,”, “;”, “)” |
| VARIABLE\_A | + | “[” | “=”, “,” “;”, “)” |
| FUNC\_DEFINITIONS | - | “void”, ”real” , “integer” | EOF |
| FUNC\_DEFINITIONS\_A | + | “void”, ”real” , “integer” | EOF |
| FUNC\_DEFINITION | - | “void”, ”real” , “integer” | “void”, ”real” , “integer”, EOF |
| RETURNED\_TYPE | - | “void”, ”real” , “integer” | “id” |
| PARAM\_DEFINITIONS | + | “real” , “integer” | “)” |
| STATEMENTS | - | “id”, “{“, “return”, | “end”, “}” |
| STATEMENTS\_A | + | “id”, “{“, “return”, | “end”, “}” |
| STATEMENT | - | “id”, “{“, “return” | “;” |
| STATEMENT\_A | + | “int\_number”, “real\_number”, “id” | “;” |
| STATEMENT\_B | - | “(“ “[“ “=” | “;” |
| BLOCK | - | “{“ | EOF “;” “void”, ”real” , “integer” |
| FUNCTION\_CALL | - | “id” | “;” |
| PARAMETERS\_LIST | + | “id” | “)” |
| EXPRESSION | - | “int\_number”, “real\_number”, “id” | “;” |
| EXPRESSION’ | + | “[“, “ar\_op” | “;” |