program → functions

function → function functions | ϵ

function → FUNCTION IDENTIFIER SEMICOLON BEGIN_PARAMS declarations END_PARAMS BEGIN_LOCALS declarations END_LOCALS BEGIN_BODY statements END_BODY

declarations → declaration SEMICOLON declarations | ϵ

declaration → identifiers COLON declaration_params INTEGER

declaration_params → ENUM L_PAREN identifiers R_PAREN | ARRAY L_SQUARE_BRACKET NUMBER R_SQUARE_BRACKET OF | ϵ

identifiers → IDENTIFIER identifiers | COMMA IDENTIFIER identifiers | EPSILON

statements → statement SEMICOLON statements | ϵ

statement → var ASSIGN expr | IF bool_expr THEN statements ENDIF | IF bool_expr THEN statements ELSE statements ENDIF | WHILE bool_expr BEGINLOOP statements ENDLOOP | DO BEGINLOOP statements ENDLOOP WHILE bool_expr | READ vars | WRITE vars | CONTINUE | RETURN expr | ϵ

vars → var | var COMMA vars | ϵ

var → IDENTIFIER | IDENTIFIER L_SQUARE_BRACKET expr R_SQUARE_BRACKET

bool_expr → relation_and_expr bool_expr_params

bool_expr_params → OR relation_and_expr bool_expr_params | ϵ

relation_and_expr → relation_expr relation_and_expr_params

relation_and_expr_params → AND relation_expr relation_and_expr_params | ϵ

relation_expr → relation_exprs | NOT relation_exprs

relation_exprs → expr comp expr | TRUE | FALSE | L_PAREN bool_expr R_PAREN

comp → EQ | NEQ | LT | GT | LTE | GTE

expr → mult_expr expr_ops

expr_ops → ADD mult_expr expr_ops | SUB mult_expr expr_ops | ϵ

mult_expr → term mult_expr_ops

mult_expr_ops → MULT term mult_expr_ops | DIV term mult_expr_ops | MOD term mult_expr_ops | ϵ

term → terms | SUB terms | IDENTIFIER L_PAREN exprs R_PAREN

terms → var | NUMBER | L_PAREN expr R_PAREN