

**Program  $\rightarrow$  Function  $| \epsilon$**

**Function  $\rightarrow$  Function  $\rightarrow$  identifier  $\rightarrow$  semicolon  $\rightarrow$  beginparams  $\rightarrow$  Declarations  $\rightarrow$   
endparams  $\rightarrow$  beginlocals  $\rightarrow$  Declarations  $\rightarrow$  endllocals  $\rightarrow$  beginbody  $\rightarrow$  Declarations  $\rightarrow$   
endbody**

**Declarations  $\rightarrow$  Declaration  $\rightarrow$  semicolon  $\rightarrow$  Declarations  
 $| \epsilon$**

**Declaration  $\rightarrow$  Identifiers  $\rightarrow$  integer  
 $|$  Identifiers  $\rightarrow$  array  $\rightarrow$  [  $\rightarrow$  number  $\rightarrow$  ]  $\rightarrow$  of  $\rightarrow$  integer**

**Identifiers  $\rightarrow$  identifier  $\rightarrow$  :  
 $|$  identifier  $\rightarrow$  ,  $\rightarrow$  Identifiers**

**Statement  $\rightarrow$  Var  $\rightarrow$  :=  $\rightarrow$  Expression  
 $|$  if  $\rightarrow$  Bool-Expr  $\rightarrow$  then  $\rightarrow$  Statements  $\rightarrow$  StatementElse  $\rightarrow$  endif  
 $|$  while  $\rightarrow$  Bool-Expr  $\rightarrow$  beginloop  $\rightarrow$  Statements  $\rightarrow$  endloop  
 $|$  do  $\rightarrow$  beginloop  $\rightarrow$  Statements  $\rightarrow$  endloop  $\rightarrow$  while  $\rightarrow$  Bool-Expr  
 $|$  read  $\rightarrow$  Vars  
 $|$  write  $\rightarrow$  Vars  
 $|$  continue  
 $|$  return  $\rightarrow$  Expression**

**Statements  $\rightarrow$  Statement  $\rightarrow$  semicolon  $\rightarrow$  Statements  
 $|$  Statement  $\rightarrow$  semicolon**

**StatementElse  $\rightarrow$  else  $\rightarrow$  Statements**

|  $\epsilon$

**Vars  $\rightarrow$  Var  $\rightarrow$  ,  $\rightarrow$  Vars**

| Var

**Bool-Expr  $\rightarrow$  Relation-And-Expr**

| Relation-And-Expr  $\rightarrow$  or  $\rightarrow$  Bool-Expr

**Relation-And-Expr  $\rightarrow$  Relation-Expr**

| Relation-Expr  $\rightarrow$  and  $\rightarrow$  Relation-And-Expr

**Relation-Expr  $\rightarrow$  not  $\rightarrow$  Relation-Expr  $\rightarrow$  Expression  $\rightarrow$  Comp  $\rightarrow$  Expression**

| true

| false

| (  $\rightarrow$  Bool-Expr  $\rightarrow$  )

**Comp  $\rightarrow$  ==**

| <>

| <

| >

| <=

| >=

**Expression  $\rightarrow$  Multiplicative-Expr  $\rightarrow$  +  $\rightarrow$  Expression**

| Multiplicative-Expr  $\rightarrow$  -  $\rightarrow$  Expression

**Multiplicative-Expr  $\rightarrow$  Term  $\rightarrow$  \*  $\rightarrow$  Multiplicative-Expr**

| Term  $\rightarrow$  /  $\rightarrow$  Multiplicative-Expr

| **Term  $\rightarrow$  %  $\rightarrow$  Multiplicative-Expr**

**Term  $\rightarrow$  -  $\rightarrow$  Var**

| **Var**

| **-  $\rightarrow$  number**

| **number**

| **-  $\rightarrow$  (  $\rightarrow$  Expression  $\rightarrow$  )**

| **(  $\rightarrow$  Expression  $\rightarrow$  )**

| **identifier  $\rightarrow$  (  $\rightarrow$  Expressions  $\rightarrow$  )**

**Expressions  $\rightarrow$  Expression  $\rightarrow$  ,  $\rightarrow$  Expressions**

| **Expression**

|  **$\epsilon$**

**Var  $\rightarrow$  identifier**

| **identifier  $\rightarrow$  [  $\rightarrow$  Expression  $\rightarrow$  ]**