

$$\begin{aligned}
& \textit{Program} \rightarrow \mathbf{begin} \textit{Statements} \mathbf{end} \\
& \textit{Statements} \rightarrow \epsilon \\
& \hspace{10em} \textit{IfThenElseStatement} \\
& \hspace{10em} \textit{DoWhileStatement} \\
& \textit{Statement} \rightarrow \textit{PrintStatement} \\
& \hspace{10em} \textit{DeclarationStatement} \\
& \hspace{10em} \textit{AssignmentStatement} \\
& \textit{IfThenElseStatement} \rightarrow \textit{IfThen MaybeElse} \\
& \textit{IfThen} \rightarrow \mathbf{if} \textit{Expression} \mathbf{then} \{ \textit{Statements} \} \\
& \hspace{10em} \epsilon \\
& \textit{MaybeElse} \rightarrow \mathbf{else} \{ \textit{Statements} \} \\
& \textit{DoWhileStatement} \rightarrow \mathbf{do} \{ \textit{Statements} \} \mathbf{while} (\textit{Expression}) ; \\
& \textit{PrintStatement} \rightarrow \mathbf{print} (\textit{Expression}) ; \\
& \textit{DeclarationStatement} \rightarrow \textit{TypeSpecifier} \textit{InitDeclarator} ; \\
& \hspace{10em} \mathbf{int} \\
& \textit{TypeSpecifier} \rightarrow \mathbf{bool} \\
& \textit{AssignmentStatement} \rightarrow \mathbf{Identifier} = \textit{Expression} ; \\
& \hspace{10em} \mathbf{Identifier} \\
& \textit{InitDeclarator} \rightarrow \mathbf{Identifier} = \textit{Expression} \\
& \textit{Expression} \rightarrow \textit{EqualityExpression} \\
& \hspace{10em} \textit{RelationalExpression} \\
& \textit{EqualityExpression} \rightarrow \textit{EqualityExpression} == \textit{RelationalExpression} \\
& \hspace{10em} \textit{AdditiveExpression} \\
& \textit{RelationalExpression} \rightarrow \textit{RelationalExpression} > \textit{AdditiveExpression} \\
& \hspace{10em} \textit{RelationalExpression} >= \textit{AdditiveExpression} \\
& \hspace{10em} \textit{MultiplicativeExpression} \\
& \textit{AdditiveExpression} \rightarrow \textit{AdditiveExpression} + \textit{MultiplicativeExpression} \\
& \hspace{10em} \textit{PrimaryExpression} \\
& \textit{MultiplicativeExpression} \rightarrow \textit{MultiplicativeExpression} * \textit{PrimaryExpression} \\
& \hspace{10em} \mathbf{Identifier} \\
& \textit{PrimaryExpression} \rightarrow \mathbf{Number} \\
& \hspace{10em} (\textit{Expression})
\end{aligned}$$