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Homework 4

Question 1:

CFG	Translation
$program \rightarrow MAIN LPAREN RPAREN$ $LCURLY list RCURLY$	$program.trans = list.trans$
$list \rightarrow list oneItem$ $ \epsilon$	$list.trans = list_1.trans \cup oneItem.trans$ $list.trans = \{\}$
$oneItem \rightarrow decl$ $ stmt$	$oneItem.trans = \{\}$ $oneItem.trans = stmt.trans$
$decl \rightarrow BOOL ID SEMICOLON$ $ INT ID SEMICOLON$	$decl.trans = \{\}$ $decl.trans = \{\}$
$stmt \rightarrow ID ASSIGN exp SEMICOLON$ $ IF LPAREN exp RPAREN stmt$ $ LCURLY list RCURLY$	$stmt.trans = \{ID.value\} \cup exp.trans$ $stmt.trans = exp.trans \cup stmt_1.trans$ $stmt.trans = list.trans$
$exp \rightarrow exp PLUS exp$ $ exp LESS exp$ $ exp EQUALS exp$ $ ID$ $ BOOLLITERAL$ $ INTLITERAL$	$exp.trans = exp_1.trans \cup exp_2.trans$ $exp.trans = exp_1.trans \cup exp_2.trans$ $exp.trans = exp_1.trans \cup exp_2.trans$ $exp.trans = \{ID.value\}$ $exp.trans = \{\}$ $exp.trans = \{\}$

Question 2:

