[1] <PROGRAM> → <IDENT><ENV><DATA><PROC>
[2] <IDENT> → identification division <END_INST> program-id. ID<END_INST> author. <WORDS><END_INST> date-written. <WORDS><END_INST>
[3] <WORDS> → ID <WORDS_LR>
[4] → INTEGER <WORDS_LR
[5] <WORDS_LR> → ID <WORDS_LR>
[6] → INTEGER <WORDS_LR
[7] → ε
[8] <END_INST> → .\n
[9] <ENV> → environment division<END_INST> configuration section<END_INST> source-computer. <WORDS><END_INST> object-computer. <WORDS><END_INST>
[10] <DATA> → data division<END_INST> working-storage section<END_INST> <VAR_LIST>
[11] <VAR_LIST> → <VAR_DECL> <VAR_LIST>
[12] → ε
[13] <VAR_DECL> → <LEVEL> ID pic IMAGE <VAR_DECL_TAIL>
[14] <VAR_DECL_TAIL> → value INTEGER<END_INST>
[15] → <END_INST>
[16] <LEVEL> → INTEGER
[17] <PROC> → procedure division<END_INST> ID section<END_INST> <LABELS> end program ID.
[18] <LABELS> → <LABEL><END_INST> <INSTRUCTION_LIST> <LABELS_LR>
[19] <LABELS_LR> → <LABEL><END_INST> <INSTRUCTION_LIST> <LABELS_LR>
[20] → ε
[21] <LABEL> → ID
[22] <INSTRUCTION_LIST> → <INSTRUCTION> <INSTRUCTION_LIST>
[23] → ε
[24] <INSTRUCTION> → <ASSIGNATION>
[25] → <IF>
[26] → <CALL>
[27] → <READ>
[28] → <WRITE>
[29] → stop run<END_INST>
[30] <ASSIGNATION> → move <EXPRESSION> to ID<END_INST>
[31] → compute ID = <EXPRESSION><END_INST>
[32] → add <EXPRESSION> to ID<END_INST>
[33] → subtract <EXPRESSION> from ID<END_INST>
[34] → multiply <ASSIGN_END><END_INST>
[35] → divide <ASSIGN_END><END_INST>
[36] <ASSIGN_END> → <EXPRESSION>,<EXPRESSION> giving ID
[37] <EXPRESSION> → <EXP_AND> <EXPRESSION_LR>
[38] <EXPRESSION_LR> → or <EXP_AND> <EXPRESSION_LR>
[39] → ε

[40]	<EXP_AND>	→	<EXP_EQUAL> <EXP_AND_LR>
[41]	<EXP_AND_LR>	→	and <EXP_EQUAL> <EXP_AND_LR>
[42]		→	ε
[43]	<EXP_EQUAL>	→	<EXP_ADD> <EXP_EQUAL_LR>
[44]	<EXP_EQUAL_LR>	→	= <EXP_ADD>
[45]		→	< <EXP_ADD>
[46]		→	> <EXP_ADD>
[47]		→	<= <EXP_ADD>
[48]		→	>= <EXP_ADD>
[49]		→	ε
[50]	<EXP_ADD>	→	<EXP_MULT> <EXP_ADD_LR>
[51]	<EXP_ADD_LR>	→	+ <EXP_MULT> <EXP_ADD_LR>
[52]		→	- <EXP_MULT> <EXP_ADD_LR>
[53]		→	ε
[54]	<EXP_MULT>	→	<EXP_NOT> <EXP_MULT_LR>
[55]	<EXP_MULT_LR>	→	* <EXP_NOT> <EXP_MULT_LR>
[56]		→	/ <EXP_NOT> <EXP_MULT_LR>
[57]		→	ε
[58]	<EXP_NOT>	→	-<EXP_NOT>
[59]		→	not <EXP_NOT>
[60]		→	<EXP_PARENTHESIS>
[61]	<EXP_PARENTHESIS>	→	(<EXPRESSION>)
[62]		→	<EXP_TERM>
[63]	<EXP_TERM>	→	ID
[64]		→	INTEGER
[65]		→	true
[66]		→	false
[67]	<IF>	→	if <EXPRESSION> then <INSTRUCTION_LIST> <IF_END>
[68]	<IF_END>	→	else <INSTRUCTION_LIST> end-if
[69]		→	end-if
[70]	<CALL>	→	perform ID <CALL_TAIL>
[71]	<CALL_TAIL>	→	until <EXPRESSION><END_INST>
[72]		→	<END_INST>
[73]	<READ>	→	accept ID<END_INST>
[74]	<WRITE>	→	display <WRITE_TAIL>
[75]	<WRITE_TAIL>	→	<EXPRESSION><END_INST>
[76]		→	STRING<END_INST>

Variable	First[1]	Follow[1]
<PROGRAM>	identification	
<IDENT>	identification	environment
<WORDS>	ID, INTEGER	.
<WORDS_LR>	ID, INTEGER, ε	.

<END_INST>	.	program-id, date-written, environment, configuration, source-computer, object-computer, data, working-storage, INTEGER, ε, ID, move, compute, add, substract, multiply, divide, if, perform, accept, display, stop
<ENV>	environment	data
<DATA>	data	procedure
<VAR_LIST>	INTEGER, ε	procedure
<VAR_DECL>	INTEGER	INTEGER, ε
<VAR_DECL_TAIL>	value, .	INTEGER, ε
<LEVEL>	INTEGER	ID
<PROC>	procedure	
<LABELS>	ID	end
<LABELS_LR>	ID, ε	end
<LABEL>	ID	.
<INSTRUCTION_LIST>	move, compute, add, substract, multiply, divide, if, perform, accept, display, stop, ε	ID, ε
<INSTRUCTION>	move, compute, add, substract, multiply, divide, if, perform, accept, display, stop	move, compute, add, substract, multiply, divide, if, perform, accept, display, stop, ε
<ASSIGNATION>	move, compute, add, substract, multiply, divide	move, compute, add, substract, multiply, divide, if, perform, accept, display, stop, ε
<ASSIGN_END>	-, not, (, ID, INTEGER, true, false	.
<EXPRESSION>	-, not, (, ID, INTEGER, true, false	to, ., from, , , giving,), then
<EXPRESSION_LR>	or, ε	to, ., from, , , giving,), then
<EXP_AND>	-, not, (, ID, INTEGER, true, false	or, ε
<EXP_AND_LR>	and, ε	or, ε
<EXP_EQUAL>	-, not, (, ID, INTEGER, true, false	and, ε
<EXP_EQUAL_LR>	=, <, >, <=, >=, ε	and, ε
<EXP_ADD>	-, not, (, ID, INTEGER, true, false	=, <, >, <=, >=, ε
<EXP_ADD_LR>	+, -, ε	=, <, >, <=, >=, ε
<EXP_MULT>	-, not, (, ID, INTEGER, true, false	+, -, ε
<EXP_MULT_LR>	*, /, ε	+, -, ε
<EXP_NOT>	-, not, (, ID, INTEGER, true, false	*, /, ε
<EXP_PARENTHESIS>	(, ID, INTEGER, true, false	*, /, ε
<EXP_TERM>	ID, INTEGER, true, false	*, /, ε
<IF>	if	move, compute, add, substract, multiply, divide, if, perform, accept, display, stop, ε
<IF_END>	else, end-if	move, compute, add, substract, multiply, divide, if, perform, accept, display, stop, ε

<CALL>	perform	move, compute, add, substract, multiply, divide, if, perform, accept, display, stop, ε
<CALL_TAIL>	until, .	move, compute, add, substract, multiply, divide, if, perform, accept, display, stop, ε
<READ>	accept	move, compute, add, substract, multiply, divide, if, perform, accept, display, stop, ε
<WRITE>	display	move, compute, add, substract, multiply, divide, if, perform, accept, display, stop, ε
<WRITE_TAIL>	STRING, -, not, (, ID, INTEGER, true, false	move, compute, add, substract, multiply, divide, if, perform, accept, display, stop, ε

	identification	ID	.	environment	data	INTEGER	value
<PROGRAM>	1						
<IDENT>	2						
<WORDS>		3					
<WORDS_LR>		4	7				
<END_INST>			8				
<ENV>				9			
<DATA>					10		
<VAR_LIST>					11		12
<VAR_DECL>					11		
<VAR_DECL_TAIL>			15				14
<LEVEL>						16	
<PROC>							
<LABELS>		18					
<LABELS_LR>		19					
<LABEL>		21					
<INSTRUCTION_LIST>		23					
<INSTRUCTION>							
<ASSIGNATION>							
<ASSIGN_END>		36				36	
<EXPRESSION>		37				37	
<EXPRESSION_LR>			39				
<EXP_AND>		40				40	
<EXP_AND_LR>							
<EXP_EQUAL>		43				43	
<EXP_EQUAL_LR>							
<EXP_ADD>		50				50	
<EXP_ADD_LR>							
<EXP_MULT>		54				54	
<EXP_MULT_LR>							
2<EXP_NOT>		60				60	
<EXP_PARENTHESIS>		61				61	
<EXP_TERM>		63				64	
<IF>							
<IF_END>							
<CALL>							
<CALL_TAIL>							
<READ>							
<WRITE>							
<WRITE_TAIL>		75				75	

	procedure	move	compute	add	substract	multiply	divide
<PROGRAM>							
<IDENT>							
<WORDS>							
<WORDS_LR>							
<END_INST>							
<ENV>							
<DATA>							
<VAR_LIST>	12						
<VAR_DECL>							
<VAR_DECL_TAIL>							
<LEVEL>							
<PROC>	15						
<LABELS>							
<LABELS_LR>							
<LABEL>							
<INSTRUCTION_LIST>		22	22	22	22	22	22
<INSTRUCTION>		24	24	24	24	24	24
<ASSIGNATION>		30	31	32	33	34	35
<ASSIGN_END>							
<EXPRESSION>							
<EXPRESSION_LR>							
<EXP_AND>							
<EXP_AND_LR>							
<EXP_EQUAL>							
<EXP_EQUAL_LR>							
<EXP_ADD>							
<EXP_ADD_LR>							
<EXP_MULT>							
<EXP_MULT_LR>							
<EXP_NOT>							
<EXP_PARENTHESIS>							
<EXP_TERM>							
<IF>							
<IF_END>							
<CALL>							
<CALL_TAIL>							
<READ>							
<WRITE>							
<WRITE_TAIL>							

	perform	accept	display	stop	-	not	(	true	false
<PROGRAM>									
<IDENT>									
<WORDS>									
<WORDS_LR>									
<END_INST>									
<ENV>									
<DATA>									
<VAR_LIST>									
<VAR_DECL>									
<VAR_DECL_TAIL>									
<LEVEL>									
<PROC>									
<LABELS>									
<LABELS_LR>									
<LABEL>									
<INSTRUCTION_LIST>	22	22	22	22					
<INSTRUCTION>	26	27	28	29					
<ASSIGNATION>									
<ASSIGN_END>					36	36	36	36	36
<EXPRESSION>					37	37	37	37	37
<EXPRESSION_LR>									
<EXP_AND>					40	40	40	40	40
<EXP_AND_LR>									
<EXP_EQUAL>					43	43	43	43	43
<EXP_EQUAL_LR>									
<EXP_ADD>					50	50	50	50	50
<EXP_ADD_LR>					52				
<EXP_MULT>					54	54	54	54	54
<EXP_MULT_LR>					57				
<EXP_NOT>					58	59	60	60	60
<EXP_PARENTHESIS>							61	62	62
<EXP_TERM>								65	66
<IF>									
<IF_END>									
<CALL>	70								
<CALL_TAIL>									
<READ>		72							
<WRITE>			73						
<WRITE_TAIL>					75	75	75	75	75

	or	and	=	<	>	<=	>=	*	/	if	else	end-if	+	until
<PROGRAM>														
<IDENT>														
<WORDS>														
<WORDS_LR>														
<END_INST>														
<ENV>														
<DATA>														
<VAR_LIST>														
<VAR_DECL>														
<VAR_DECL_TAIL>														
<LEVEL>														
<PROC>														
<LABELS>														
<LABELS_LR>														
<LABEL>														
<INSTRUCTION_LIST>										22				
<INSTRUCTION>										25				
<ASSIGNATION>														
<ASSIGN_END>														
<EXPRESSION>														
<EXPRESSION_LR>	38													
<EXP_AND>														
<EXP_AND_LR>	42	41												
<EXP_EQUAL>														
<EXP_EQUAL_LR>		49	44	45	46	47	48							
<EXP_ADD>														
<EXP_ADD_LR>			53	53	53	53	53						51	
<EXP_MULT>														
<EXP_MULT_LR>								55	56				57	
<EXP_NOT>														
<EXP_PARENTHESIS>														
<EXP_TERM>														
<IF>										67				
<IF_END>											68	69		
<CALL>														
<CALL_TAIL>														71
<READ>														
<WRITE>														
<WRITE_TAIL>														

	until	STRING	,	to	from	giving	)	then
<PROGRAM>								
<IDENT>								
<WORDS>								
<WORDS_LR>								
<END_INST>								
<ENV>								
<DATA>								
<VAR_LIST>								
<VAR_DECL>								
<VAR_DECL_TAIL>								
<LEVEL>								
<PROC>								
<LABELS>								
<LABELS_LR>								
<LABEL>								
<INSTRUCTION_LIST>								
<INSTRUCTION>								
<ASSIGNATION>								
<ASSIGN_END>								
<EXPRESSION>								
<EXPRESSION_LR>			39	39	39	39	39	39
<EXP_AND>								
<EXP_AND_LR>								
<EXP_EQUAL>								
<EXP_EQUAL_LR>								
<EXP_ADD>								
<EXP_ADD_LR>								
<EXP_MULT>								
<EXP_MULT_LR>								
<EXP_NOT>								
<EXP_PARENTHESIS>								
<EXP_TERM>								
<IF>								
<IF_END>								
<CALL>								
<CALL_TAIL>	71							
<READ>								
<WRITE>								
<WRITE_TAIL>		76						