

Solution to Problem 18

Task. As described in the corresponding lecture, every grammar obtained from a finite automaton is LL(1). For the grammar from Homework 8, build the corresponding table.

Solution. This grammar has three variables S , N , and R , three terminal symbols a , r , and A , and the following rules:

1. $S \rightarrow rR$
2. $S \rightarrow aN$
3. $S \rightarrow AN$
4. $N \rightarrow rR$
5. $N \rightarrow aN$
6. $N \rightarrow AN$
7. $R \rightarrow rR$
8. $R \rightarrow aR$
9. $R \rightarrow AR$
10. $N \rightarrow \varepsilon$

So, the corresponding table has the following form:

	a	r	A	eol
S	2	1	3	–
N	5	4	6	10
R	8	7	9	–