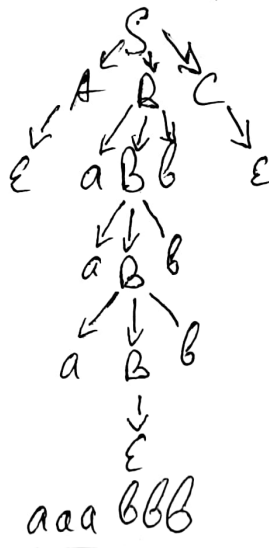


Купцов К.
8383
Б-3

$$C \rightarrow b C b 1 \varepsilon$$
$$S \rightarrow ABC \rightarrow BC \rightarrow aBbC \rightarrow abC \rightarrow ab$$

```

graph TD
    S --> A
    S --> B
    S --> C
    A --> a1[a]
    A --> A1[A]
    B --> a2[a]
    B --> B1[B]
    C --> b1[b]
    C --> C1[C]
    A1 --> a3[a]
    A1 --> A2[A]
    B1 --> b2[b]
    B1 --> B2[B]
    C1 --> b3[b]
    C1 --> C2[C]
    A2 --> a4[a]
    A2 --> A3[A]
    B2 --> b4[b]
    B2 --> B3[B]
    C2 --> b5[b]
    C2 --> C3[C]
    A3 --> a5[a]
    A3 --> A4[A]
    B3 --> b6[b]
    B3 --> B4[B]
    C3 --> b7[b]
    C3 --> C4[C]
    A4 --> a6[a]
    A4 --> A5[A]
    B4 --> b8[b]
    B4 --> B5[B]
    C4 --> b9[b]
    C4 --> C5[C]
    A5 --> a7[a]
    A5 --> A6[A]
    B5 --> b10[b]
    B5 --> B6[B]
    C5 --> b11[b]
    C5 --> C6[C]
    A6 --> a8[a]
    A6 --> A7[A]
    B6 --> b12[b]
    B6 --> B7[B]
    C6 --> b13[b]
    C6 --> C7[C]
    A7 --> a9[a]
    A7 --> A8[A]
    B7 --> b14[b]
    B7 --> B8[B]
    C7 --> b15[b]
    C7 --> C8[C]
    A8 --> a10[a]
    A8 --> A9[A]
    B8 --> b16[b]
    B8 --> B9[B]
    C8 --> b17[b]
    C8 --> C9[C]
    A9 --> a11[a]
    A9 --> A10[A]
    B9 --> b18[b]
    B9 --> B10[B]
    C9 --> b19[b]
    C9 --> C10[C]
    A10 --> a12[a]
    A10 --> A11[A]
    B10 --> b20[b]
    B10 --> B11[B]
    C10 --> b21[b]
    C10 --> C11[C]
    A11 --> a13[a]
    A11 --> A12[A]
    B11 --> b22[b]
    B11 --> B12[B]
    C11 --> b23[b]
    C11 --> C12[C]
    A12 --> a14[a]
    A12 --> A13[A]
    B12 --> b24[b]
    B12 --> B13[B]
    C12 --> b25[b]
    C12 --> C13[C]
    A13 --> a15[a]
    A13 --> A14[A]
    B13 --> b26[b]
    B13 --> B14[B]
    C13 --> b27[b]
    C13 --> C14[C]
    A14 --> a16[a]
    A14 --> A15[A]
    B14 --> b28[b]
    B14 --> B15[B]
    C14 --> b29[b]
    C14 --> C15[C]
    A15 --> a17[a]
    A15 --> A16[A]
    B15 --> b30[b]
    B15 --> B16[B]
    C15 --> b31[b]
    C15 --> C16[C]
    A16 --> a18[a]
    A16 --> A17[A]
    B16 --> b32[b]
    B16 --> B17[B]
    C16 --> b33[b]
    C16 --> C17[C]
    A17 --> a19[a]
    A17 --> A18[A]
    B17 --> b34[b]
    B17 --> B18[B]
    C17 --> b35[b]
    C17 --> C18[C]
    A18 --> a20[a]
    A18 --> A19[A]
    B18 --> b36[b]
    B18 --> B19[B]
    C18 --> b37[b]
    C18 --> C19[C]
    A19 --> a21[a]
    A19 --> A20[A]
    B19 --> b38[b]
    B19 --> B20[B]
    C19 --> b39[b]
    C19 --> C20[C]
    A20 --> a22[a]
    A20 --> A21[A]
    B20 --> b40[b]
    B20 --> B21[B]
    C20 --> b41[b]
    C20 --> C21[C]
    A21 --> a23[a]
    A21 --> A22[A]
    B21 --> b42[b]
    B21 --> B22[B]
    C21 --> b43[b]
    C21 --> C22[C]
    A22 --> a24[a]
    A22 --> A23[A]
    B22 --> b44[b]
    B22 --> B23[B]
    C22 --> b45[b]
    C22 --> C23[C]
    A23 --> a25[a]
    A23 --> A24[A]
    B23 --> b46[b]
    B23 --> B24[B]
    C23 --> b47[b]
    C23 --> C24[C]
    A24 --> a26[a]
    A24 --> A25[A]
    B24 --> b48[b]
    B24 --> B25[B]
    C24 --> b49[b]
    C24 --> C25[C]
    A25 --> a27[a]
    A25 --> A26[A]
    B25 --> b50[b]
    B25 --> B26[B]
    C25 --> b51[b]
    C25 --> C26[C]
    A26 --> a28[a]
    A26 --> A27[A]
    B26 --> b52[b]
    B26 --> B27[B]
    C26 --> b53[b]
    C26 --> C27[C]
    A27 --> a29[a]
    A27 --> A28[A]
    B27 --> b54[b]
    B27 --> B28[B]
    C27 --> b55[b]
    C27 --> C28[C]
    A28 --> a30[a]
    A28 --> A29[A]
    B28 --> b56[b]
    B28 --> B29[B]
    C28 --> b57[b]
    C28 --> C29[C]
    A29 --> a31[a]
    A29 --> A30[A]
    B29 --> b58[b]
    B29 --> B30[B]
    C29 --> b59[b]
    C29 --> C30[C]
    A30 --> a32[a]
    A30 --> A31[A]
    B30 --> b60[b]
    B30 --> B31[B]
    C30 --> b61[b]
    C30 --> C31[C]
    A31 --> a33[a]
    A31 --> A32[A]
    B31 --> b62[b]
    B31 --> B32[B]
    C31 --> b63[b]
    C31 --> C32[C]
    A32 --> a34[a]
    A32 --> A33[A]
    B32 --> b64[b]
    B32 --> B33[B]
    C32 --> b65[b]
    C32 --> C33[C]
    A33 --> a35[a]
    A33 --> A34[A]
    B33 --> b66[b]
    B33 --> B34[B]
    C33 --> b67[b]
    C33 --> C34[C]
    A34 --> a36[a]
    A34 --> A35[A]
    B34 --> b68[b]
    B34 --> B35[B]
    C34 --> b69[b]
    C34 --> C35[C]
    A35 --> a37[a]
    A35 --> A36[A]
    B35 --> b70[b]
    B35 --> B36[B]
    C35 --> b71[b]
    C35 --> C36[C]
    A36 --> a38[a]
    A36 --> A37[A]
    B36 --> b72[b]
    B36 --> B37[B]
    C36 --> b73[b]
    C36 --> C37[C]
    A37 --> a39[a]
    A37 --> A38[A]
    B37 --> b74[b]
    B37 --> B38[B]
    C37 --> b75[b]
    C37 --> C38[C]
    A38 --> a40[a]
    A38 --> A39[A]
    B38 --> b76[b]
    B38 --> B39[B]
    C38 --> b77[b]
    C38 --> C39[C]
    A39 --> a41[a]
    A39 --> A40[A]
    B39 --> b78[b]
    B39 --> B40[B]
    C39 --> b79[b]
    C39 --> C40[C]
    A40 --> a42[a]
    A40 --> A41[A]
    B40 --> b80[b]
    B40 --> B41[B]
    C40 --> b81[b]
    C40 --> C41[C]
    A41 --> a43[a]
    A41 --> A42[A]
    B41 --> b82[b]
    B41 --> B42[B]
    C41 --> b83[b]
    C41 --> C42[C]
    A42 --> a44[a]
    A42 --> A43[A]
    B42 --> b84[b]
    B42 --> B43[B]
    C42 --> b85[b]
    C42 --> C43[C]
    A43 --> a45[a]
    A43 --> A44[A]
    B43 --> b86[b]
    B43 --> B44[B]
    C43 --> b87[b]
    C43 --> C44[C]
    A44 --> a46[a]
    A44 --> A45[A]
    B44 --> b88[b]
    B44 --> B45[B]
    C44 --> b89[b]
    C44 --> C45[C]
    A45 --> a47[a]
    A45 --> A46[A]
    B45 --> b90[b]
    B45 --> B46[B]
    C45 --> b91[b]
    C45 --> C46[C]
    A46 --> a48[a]
    A46 --> A47[A]
    B46 --> b92[b]
    B46 --> B47[B]
    C46 --> b93[b]
    C46 --> C47[C]
    A47 --> a49[a]
    A47 --> A48[A]
    B47 --> b94[b]
    B47 --> B48[B]
    C47 --> b95[b]
    C47 --> C48[C]
    A48 --> a50[a]
    A48 --> A49[A]
    B48 --> b96[b]
    B48 --> B49
```



посредственная прямая не является $U(1)$

④ Проверить, относится ли грамматика к классу LR? Киреев К.

Аналогично пункту ③ можно доказать, что грамматика
построенная грамматика не относится к классу LR
неоднозначная

8383
В-3

⑤ Можно ли проанализировать тот же язык при помощи алгоритма
приведение в НФХ;

СЧК?

1. $S_0 \rightarrow S$
 $S \rightarrow ABC$
 $A \rightarrow aAa / \epsilon$
 $B \rightarrow aBb / \epsilon$
 $C \rightarrow bCb / \epsilon$

2. $S_0 \rightarrow S$
 $S \rightarrow ZC$
 $Z \rightarrow AB$
 $A \rightarrow S_1 a / \epsilon$
 $B \rightarrow S_2 b / \epsilon$
 $C \rightarrow S_3 b / \epsilon$
 $S_1 \rightarrow aA$
 $S_2 \rightarrow aB$
 $S_3 \rightarrow bC$

3. $S_0 \rightarrow S / \epsilon$
 $S \rightarrow ZC / ZIC$
 $Z \rightarrow AB / AIB$
 $A \rightarrow S_1 a$
 $B \rightarrow S_2 b$
 $C \rightarrow S_3 b$
 $S_1 \rightarrow aA / a$
 $S_2 \rightarrow aB / a$
 $S_3 \rightarrow bC / b$

4. $S_0 \rightarrow ZC / AB / S_1 a / S_2 b / S_3 b / \epsilon$

$S \rightarrow ZC / AB / S_1 a / S_2 b / S_3 b$

$Z \rightarrow AB / S_1 a / S_2 b$

$A \rightarrow S_1 a$

$B \rightarrow S_2 b$

$C \rightarrow S_3 b$

$S_1 \rightarrow aA / a$

$S_2 \rightarrow aB / a$

$S_3 \rightarrow bC / b$

5. $S_0 \rightarrow ZC \mid AB \mid S_1L_1 \mid S_2L_2 \mid S_3L_2 \mid \epsilon$

$Z \rightarrow AB \mid S_1L_1 \mid S_2L_2$

$A \rightarrow S_1L_1$

$B \rightarrow S_2L_2$

$C \rightarrow S_3L_2$

$S_1 \rightarrow L_1A \mid a$

$S_2 \rightarrow L_1B \mid a$

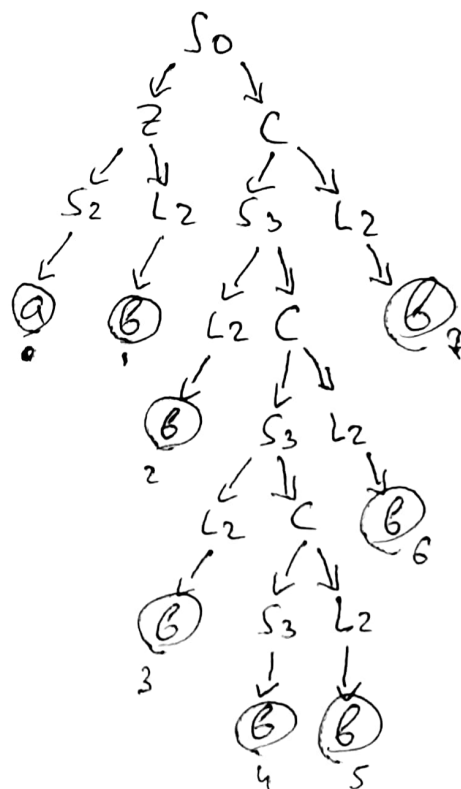
$S_3 \rightarrow L_2C \mid b$

$L_1 \rightarrow a$

$L_2 \rightarrow b$

$w = a \overset{0}{b} \overset{1}{b} \overset{2}{b} \overset{3}{b} \overset{4}{b} \overset{5}{b} \overset{6}{b} \overset{7}{b}$

	0	1	2	3	4	5	6	7
0	S_0	S_0	\emptyset	S_0	\emptyset	S_0	\emptyset	S_0
1		S_3L_2	S_0	S_3	S_0C	S_3	S_0C	S_3
2			S_3	S_0	S_3	S_0	S_3	S_0
3			L_2	C	S_3	C	S_3	S_0
4				S_3	S_0	S_3	S_0	S_3
5				L_2	C	S_3	C	S_3
6						S_3	S_0	S_3
7						L_2	C	S_3



Vinay K.

8383

B-3

✓

$$w = \begin{matrix} 0 & 1 & 2 & 3 & 4 & 5 & 6 \\ 0 & 1 & 2 & 3 & 4 & 5 & 6 \end{matrix}$$

	0	1	2	3	4	5	6	
0	$S_3 L_2$	$S_0 C$	S_3	$S_0 C$	S_3	$S_0 C$	S_3	\times
1		$S_3 L_2$	$S_0 C$	S_3	$S_0 C$	S_3	$S_0 C$	
2			$S_3 L_2$	$S_0 C$	S_3	$S_0 C$	S_3	
3				$S_3 L_2$	$S_0 C$	S_3	$S_0 C$	
4					$S_3 L_2$	$S_0 C$	S_3	
5						$S_3 L_2$	$S_0 C$	
6							$S_3 L_2$	

Vinayak K.

8383

B-3