

形式语言作业

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习题: p67 3, 4, 8.2, 8.6, 10.3, 11.3

3. $E \Rightarrow E + E$

$$\Rightarrow E + E * E$$

$$\xRightarrow{3} id + id * id$$

$$E \Rightarrow E * E$$

$$\Rightarrow E + E * E$$

$$\xRightarrow{3} id + id * id$$

$$id + id * id \xLeftarrow{3} E + E * E$$

$$\Leftarrow E * E$$

$$\Leftarrow E$$

$$id + id * id \xLeftarrow{3} E + E * E$$

$$\Leftarrow E + E$$

$$\Leftarrow E$$

4. $S \Rightarrow a\underline{S}BC$

$$\Rightarrow aa\underline{S}BCBC$$

$$\Rightarrow aaa\underline{B}CBCBC$$

$$\Rightarrow aaab\underline{C}BCBC$$

$$\Rightarrow aaab\underline{B}CCBC$$

$$\Rightarrow aaabb\underline{C}\underline{C}BC$$

$$\Rightarrow aaabb\underline{C}\underline{B}CC$$

$$\Rightarrow aaabb\underline{B}\underline{C}CC$$

$$\Rightarrow aaabb\underline{b}\underline{C}CC$$

$$\Rightarrow aaabb\underline{b}\underline{c}CC$$

$$\Rightarrow aaabb\underline{b}\underline{c}\underline{c}C$$

$$\Rightarrow aaabb\underline{b}\underline{c}\underline{c}\underline{c}$$

$$S \Rightarrow a\underline{S}BC$$

$$\Rightarrow aa\underline{S}BCBC$$

$$\Rightarrow aaa\underline{B}CBCBC$$

$$\Rightarrow aaab\underline{C}BCBC$$

$$\Rightarrow aaab\underline{B}\underline{C}\underline{C}BC$$

$$\Rightarrow aaab\underline{B}\underline{C}BCC$$

$$\Rightarrow aaabb\underline{C}\underline{B}CC$$

$$\Rightarrow aaabb\underline{B}\underline{C}CC$$

$$\Rightarrow aaabb\underline{b}\underline{C}CC$$

$$\Rightarrow aaabb\underline{b}\underline{c}CC$$

$$\Rightarrow aaabb\underline{b}\underline{c}\underline{c}C$$

$$\Rightarrow aaabb\underline{b}\underline{c}\underline{c}\underline{c}$$

$$aaabb\underline{b}\underline{c}\underline{c}\underline{c} \Leftarrow aaabb\underline{b}\underline{c}\underline{c}C$$

$$\Leftarrow aaabb\underline{b}\underline{c}CC$$

$$\Leftarrow aaabb\underline{b}\underline{C}CC$$

$$\Leftarrow aaabb\underline{B}\underline{C}CC$$

$$\Leftarrow aaab\underline{B}BCC$$

$$\Leftarrow aaa\underline{B}\underline{B}\underline{C}CC$$

$$\Leftarrow aaa\underline{B}\underline{B}\underline{C}BCC$$

$$\Leftarrow aaa\underline{B}\underline{C}\underline{B}CC$$

$$\Leftarrow aaa\underline{B}\underline{C}\underline{B}CBC$$

$$\Leftarrow aa\underline{S}\underline{B}CBC$$

$$\Leftarrow \underline{a}\underline{S}\underline{B}C$$

$$\Leftarrow S$$

$$aaabb\underline{b}\underline{c}\underline{c}\underline{c} \Leftarrow aaabb\underline{b}\underline{c}\underline{c}C$$

$$\Leftarrow aaabb\underline{b}\underline{c}CC$$

$$\Leftarrow aaabb\underline{b}\underline{C}CC$$

$$\Leftarrow aaabb\underline{B}\underline{C}CC$$

$$\Leftarrow aaabb\underline{C}\underline{B}CC$$

$$\Leftarrow aaab\underline{B}\underline{C}BCC$$

$$\Leftarrow aaa\underline{B}\underline{B}\underline{C}BCC$$

$$\Leftarrow aaa\underline{B}\underline{C}\underline{B}CC$$

$$\Leftarrow aaa\underline{B}\underline{C}\underline{B}CBC$$

$$\Leftarrow aa\underline{S}\underline{B}CBC$$

$$\Leftarrow \underline{a}\underline{S}\underline{B}C$$

$$\Leftarrow S$$

$$8 \quad (2) \quad S \rightarrow 0B1$$

$$B \rightarrow \epsilon|0B|1B$$

$$(6) \quad S \rightarrow \epsilon|0S0|0S1|1S0|1S1$$

$$10 \quad (3) \quad G = (V_1 \cup V_2 \cup S, T, P_1 \cup P_2 \cup \{S \rightarrow S_1aS_2|S_1bS_2\}, S)$$

$$11 \quad (3) \quad G = (V_1 \cup V_2 \cup \{S, C\}, T, P'_1 \cup P_2 \cup P_3, S_1)$$

$$P'_1 = \{A \rightarrow aB | A \rightarrow aB \in P_1\}$$

$$P_3 = \{A \rightarrow aC | A \rightarrow a \in P_1\}$$

$$P_4 = \{C \rightarrow aS_2 | bS_2\}$$