1 Индивидуальные варианты

Номер варианта совпадает с номером в списке группы.

1. $$\begin{array}{lll} S \to bTaaT & T \to aST & T \to bT \\ S \to ab & T \to a & \end{array}$$

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2. $\{w_1 a^n w_2 | w_1 = h(w_2^R)\ \&\ w_2 \in \{a,b\}^*\}$, где $h(a) = aa$, $h(b) = ac$

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3. $$\begin{array}{lll} S \to aSSa & S \to SSbSS & S \to aa \\ & S \to bSb & \end{array}$$

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4. $\{wba^{n+1}ba^*w^Rv \,|\, w,v \in (aa^+b)^+a?\}$

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5. $$\begin{array}{ll} S \to SabS & S \to TT \\ S \to aT & T \to SaT \\ S \to bb & T \to ab \end{array}$$

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6. $\{w_1 a^n w_2 \,|\, (|w_1| = n \vee |w_2| < n)\ \&\ w_i \in \{a,b\}^*\}$

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7. $$\begin{array}{lll} S \to TST & S \to SbS & S \to aaa \\ T \to bb & T \to TaT & \end{array}$$

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8. $\{w_1 v w_2 \,|\, w_i \in \{a,b\}^+\ \&\ (|w_1|_a = |w_2|_b)\ \&\ v \in (aa|bb)^+\}$

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9. $$\begin{array}{lll} S \to SbTa & S \to ab & S \to ba \\ T \to SS & T \to bT & \end{array}$$

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10. $\{v_0 u v_1 u^R v_2 \,|\, |u| > 2\ \&\ u \in (aa|ba)^+\ \&\ v_0, v_1 \in a?(bb|ab)^+)\}$

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11. $$\begin{array}{lll} S \to SaaT & T \to TabS & T \to bTb \\ S \to aa & T \to \varepsilon & \end{array}$$

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12. $\{w_1 w_2 \,|\, |w_1|_{aba} = |w_2|_{baa}\ \&\ w_i \in \{a,b\}^+\}$

13.

$$\begin{array}{ll} S \to TTT & T \to SS \\ S \to aSa & T \to bTb \\ S \to ab & T \to ba \end{array}$$

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14. $\{wv^R aaavcccw^R \mid w \in \{a,b\}^* b^+ \ \& \ v \in \{b,c\}^* b^+\}$

15.

$$\begin{array}{lll} S \to TaaSbbT & & T \to abS \\ T \to aT & & T \to a \\ S \to aba & & S \to aaa \end{array}$$

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16. $\{a^n c^m b^m c^i b^k \mid m > 0 \ \& \ (k = n \vee (i > 1 \ \& \ i \neq n))\}$

17.

$$\begin{array}{lll} S \to TaSSaT & T \to TaT & T \to bb \\ S \to aba & S \to bbS & \end{array}$$

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18. $\{a^* a^k b^n c^m a^i \mid (k + n = m \cdot 2) \vee (n > m \ \& \ k < i)\}$

19.

$$\begin{array}{lll} S \to bTSa & T \to aSTb & T \to bT \\ S \to ab & T \to bb & \end{array}$$

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20. $\{wc^i(a^k c)^j w^R \mid (j = 2 \vee (i > 0 \ \& \ j = 1)) \ \& \ w \in \{a,b\}^*\}$

21.

$$\begin{array}{lll} S \to aTTa & T \to SbbS & S \to abba \\ T \to bab & T \to aTa & \end{array}$$

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22. $\{w_1 a w_2 \mid |w_1| = |w_2| \vee (w_1 w_2 = w_3 b w_4 \ \& \ |w_3| = |w_4|)\}$

23.

$$\begin{array}{lll} S \to aSa & S \to TT & T \to bTb \\ T \to SS & T \to a & S \to b \end{array}$$

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24. $\{a^k b^n c^i a^{k+j} \mid j > k \vee (i > 1 \ \& \ i = n)\}$

25.

$$S \to abSbbS \quad S \to baaTaaa \quad T \to TaT$$
$$T \to bb \quad S \to \varepsilon$$

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26. $\{w_1 a^k b^k w_2 \mid k > 2 \& w_1 \in (a^2bbb^*)^* | w_1|_{aa} = |w_2|_{ab}\}$

27.

$$S \to SaSb \quad S \to TT \quad S \to bab$$
$$T \to bbT \quad T \to \varepsilon$$

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28. $\{a^n b^m w c^i w^R c^{n+m} \mid w \in \{a, b\}^* \ \& \ (i > 0 \vee |w| \leqslant 1)\}$