Лазарева Виктория 251 группа

Задача 4

Для языка L = {ε, 110, 111, 011, 11} определена подстановка $\sigma(0)$ = {1, 11}; $\sigma(1)$ = {ε, 0}. Вычислить σ(L).

$\sigma(\varepsilon) = \varepsilon$

$\sigma(110) = \sigma(1)\sigma(1)\sigma(0)$ = {ε, 0}{ε, 0}{1, 11} = {1, 11, 01, 011, 001, 0011}

$\sigma(111) = \sigma(1)\sigma(1)\sigma(1)$ = {ε, 0}{ε, 0}{ε, 0} = {0, 00, 000}

$\sigma(011) = \sigma(0)\sigma(1)\sigma(1)$ = {1, 11}{ε, 0}{ε, 0} = {10, 1, 100, 11, 110, 1100}

$\sigma(11) = \sigma(1)\sigma(1)$ = {ε, 0}{ε, 0} = {0, 00}

σ(L) = {1, 11, 01, 011, 001, 0011, 0, 00, 000, 10, 100, 110, 1100}

Задача 5 Для языков L1 = {01,11,12} и L2 = {120,011,112} найти языки:

L_1^4/L_2 = {01010, 01011, 01110, 01111, 01120, 01121, 11010, 11011, 11110, 11111, 11120, 11121, 12010, 12011, 12110, 12111, 12120, 12121}

$L_2 \backslash L_1^3$ = {011101, 101, 011111, 111, 011112, 112, 011201, 201, 011211, 211, 011212, 212, 120101, 120111, 120112}

$L_1^R \backslash L_2^2$ = {112120, 2120, 112011, 2011, 11211, 2112}

L_2^2/L_1 = {1200, 0110, 1120, 1201, 0111, 1121}

{1} \ $((L_1 + L_2)^2/\{12\})$ = {1} \ $(\{01, 11, 12, 120, 011, 112\}^2 / \{12\})$ = {1} \ {01, 11, 12, 120, 011, 112, 111, 121, 1201, 0111, 1121} = {1, 2, 20, 12, 11, 21, 201, 121}