Niski Lab4-Grammar

Problem 1

S => Sa

=> Saa

=> Saaa

=> aaa

Problem 2

E => S

=> T+S

=> V+S

=> 8+S

=> 8+T

=> 8+V

=> 8+5

Problem 3

E => S

=> T+S

=> T+T

=> T+V

=> T+5

=> V+5

=> 8+5

Problem 4

E => S

=> T+S

=> V+S

=> 3+S

=> 3+T

=> 3+V\*T

=> 3+4\*T

=> 3+4\*V

=> 3+4\*6

Problem 5

This is wrong, it can generate aabb:

G = (N, T, P, S)

* N = { S }
* T = { a, b }
* P = { S → aS,

S → bS,

S → ε

}

* S = { S }

This is the solution:

S → aB

B → bB

B → ε

G = (N, T, P, S)

* N = { S, B }
* T = { a, b }
* P = { S → aB,

B → bB,

B → ε

}

* S = { S }

S => aB

=> abB

=> abbB

=> abbbB

=> abbb

Problem 6

E => S

=> T

=> F\*T

=> (S)\*T

=> (T+S)\*T

=> (F+S)\*T

=> (V+S)\*T

=> (3+S)\*T

=> (3+T)\*T

=> (3+F)\*T

=> (3+V)\*T

=> (3+4)\*T

=> (3+4)\*F

=> (3+4)\*V

=> (3+4)\*6

Problem 7

E => S

=> T

=> F

=> (S)

=> (T)

=> (F\*T)

=> ((S)\*T)

=> ((T+S)\*T)

=> ((F+S)\*T)

=> ((V+S)\*T)

=> ((1+S)\*T)

=> ((1+T)\*T)

=> ((1+F)\*T)

=> ((1+V)\*T)

=> ((1+2)\*T)

=> ((1+2)\*F)

=> ((1+2)\*(S))

=> ((1+2)\*(T+S))

=> ((1+2)\*(F+S))

=> ((1+2)\*(V+S))

=> ((1+2)\*(3+S))

=> ((1+2)\*(3+T))

=> ((1+2)\*(3+F))

=> ((1+2)\*(3+V))

=> ((1+2)\*(3+4))