

$$1) \Sigma = \{k, l, r, v, z\}$$

$\Sigma 89$

$$V = \{S\}$$

Startsymbol: S

Produktionen:

$$P = \{S \rightarrow k \mid kS \mid lSr \mid vVzS z\}$$

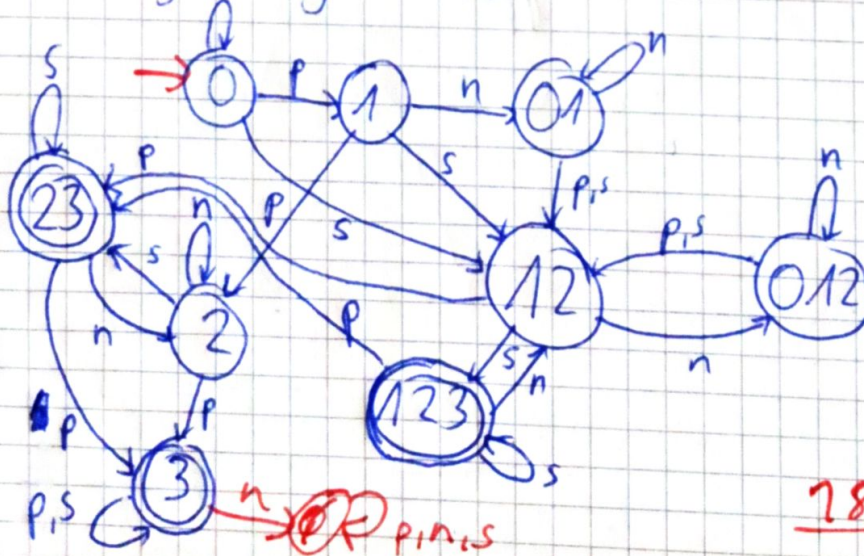
24/25 P.

2a) Übergangstabelle des DFA

~~Übergangstabelle~~

Zustand	Eingabe		
	n	p	s
0	{0}	{1}	{1,2}
12	{0,1,2}	{2,3}	{1,2,3}
23	{2}	{3}	{2,3}
3	-	{3}	{3}
2	{2}	{3}	{2,3}
123	{1,2}	{2,3}	{1,2,3}
01	{0,1}	{1,2}	{1,2}
012	{0,1,2}	{1,2}	{1,2}
1	{0,1}	{2}	{1,2}

Es folgt folgender Automat:



28,5 P.

b) $w = \varepsilon, z = \varepsilon$ somit gilt: $wz \notin L$

oder $w = \{n\}^*, z = \{n\}^*$, auch hier gilt: $wz \notin L$ f

18,5 / 25 P.

3a i) $w_1 \notin R_1, w_1 \in R_2$ ✓

$w_2 \in R_1, w_2 \in R_2$ ✓

$w_3 \in R_1, w_3 \in R_2$ ✓

$w_4 \notin R_1, w_4 \in R_2$ ✓

ii) $w = 01111$ ✓

12 P.

b i) $(a|b)(aa|bb|ab|ba)^*$ ✓ 4 P.

ii) $(a|b)^* ab$ ✓ 4 P.

iii) $((a|b) a)^*$ was ist mit ab? 2,5 P.

22,5 / 25 P.

4a) $w_1 \in L(G)$ ✓

$w_2 \notin L(G)$ ✓

$w_3 \notin L(G)$ ✓

$w_4 \in L(G)$ ✓

12 P.

b) $w_5 S \rightarrow OSAS$

$\rightarrow O \cancel{S} AS$

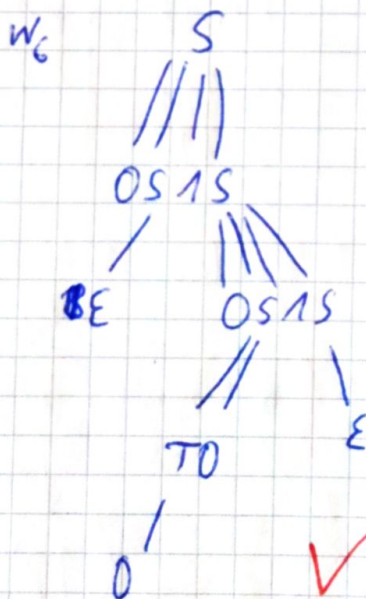
$\rightarrow O1OSAS$

$\rightarrow O1O \cancel{S} AS$

$\rightarrow O1O1T$

$\rightarrow O1O1O$ ✓

4 P.



✓ 8 P.

24 / 25 P.