

Øving 10 $A = \{0, 1\}$ $B = \{11, 101\}$

oppgave 1)

$$a) AB = \{011, 0101, 111, 1101\}$$

$$b) A \cup B = \{0, 1, 11, 101\}$$

$$c) A \cup A^3 = \{0, 1, 000, 001, 010, 100, 011, 110, 111\}$$

$$d) B^2 A = \{110, 111\}$$

$$e) B(A \cup B)A = B \cdot \{0, 1, 11, 101\} \cdot A$$

$$= \{110, 111, 1111, 11101, 1010, 1011, 10111, 101101\} \cdot A$$

$$= \{1100, 1110, 11110, 111010, 10100, 10110, 101110, 1011010,$$

$$1101, 11111, 111111, 111011, 10101, 10111, 101111, 1011011\}$$

oppgave 2) $\Sigma = \{a, b\}$

$$(b + ab)^* (a + ab)^* = (bb^* ab)^* (aa^* ab)^*$$

Dette språk består av ord som

starter på b, fortsetter så lenge man

vil, helt til det kommer en ab, denne

sekvensen kan gjentas, deretter styr du

samme bare med a.

oppgave 3)

$$0^* (10^*)^*$$

1) Like!

2) kan ikke slutte på 1

3) kan ikke bli en tom streng

oppgave 4)

$$-? [0-9]^+ (, [0-9]^+)^* ?$$

eller

$$\Sigma = \{-, ., +, /, [0-9]\}$$

$$(-|+)([0-9]^+|[0-9]^+,[0-9]^+)$$

oppgave 5)

$$((ba)(ab^*)) \mid ((ab^*) \mid b)(a)$$

\Downarrow

$$baab^* \mid (ab^* \mid b)a$$

Regex ? = 1 eller ingen

Oppgave 6)

a) ok, velger python

b) a: $\backslash d$

b: $\backslash d \backslash d \vee \backslash d \backslash d \vee \backslash d \backslash d \backslash d$

c: $\backslash w \{10,3\}$

d: $\backslash w$ (ikke $\backslash w$)

Oppgave 7)

a)

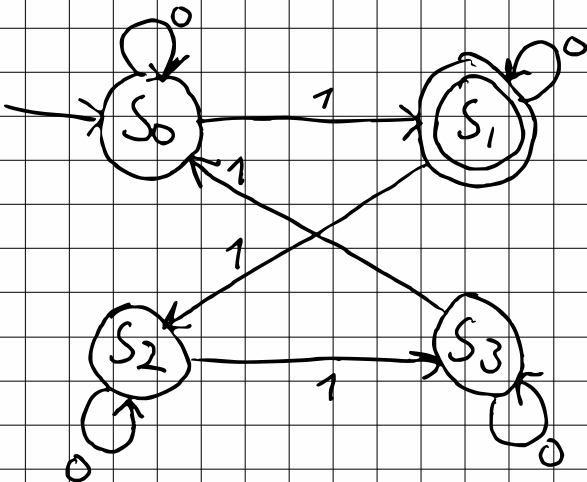
$I = \{0, 1\}$

b) $0^*1(0^*10^*10^*10^*1)^*$

Starttilstand = S_0

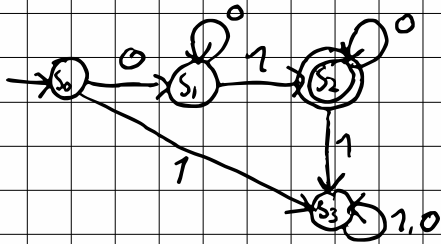
Akseptertilstand = S_1

tilstandsmengde = $\{S_0, S_1, S_2, S_3\}$



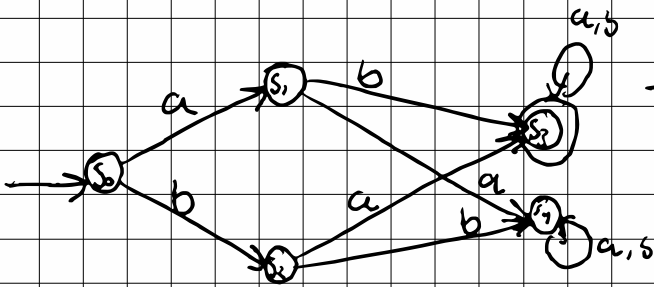
oppgave 8)

a) $I = \{0, 1\}$



	0	1
$\rightarrow s_0$	s_1	s_3
s_1	s_1	s_2
$\odot s_2$	s_2	s_3
s_3	s_3	s_3

b) $I = \{a, b\}$



	a	b
$\rightarrow s_0$	s_1	s_3
s_1	s_4	s_2
s_2	s_2	s_2
$\odot s_3$	s_2	s_4
s_4	s_4	s_4