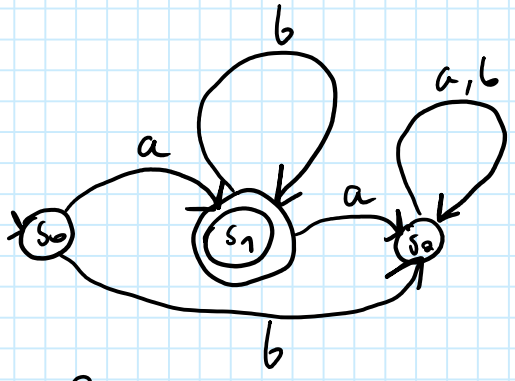
Martin Skatvedt Excersie 12

1) $r = (a+b)^* b (a+b)^* b (a+b)^* b (a+b)^*$

2) a) $r = (ab)^*$

b) $r = (a(a+b)) + (a(a+b)b) + (aabb)$

3)



- $A = \{a, b\}$
- $S = \{s_0, s_1, s_2\}$
- $Y = \{s_1\}$
- F:

F	a	b
s_0	s_1	s_2
s_1	s_2	s_1
s_2	s_2	s_2

$m = \{A, S, Y, s_0, F\}$

4) The words in L accepted by m must have an b before an a somwhere in the word

example:
w: ba -> accepted
w: bbbbacaa -> accepted
w: baba -> accepted
w: ab -> not accepted

5) The words in L accepted by m must include an n-number of b's where $n = 4 \cdot x - 1$ and $x > 0$. The letter a has no impact.

Example:

w: bbb → accepted (3 b's)

w: ababab → accepted (3 b's)

w: abababb → not accepted (4 b's)

6) a)

State	S_0	S_0	S_0	S_3	S_3	S_0	S_2
Input	a	a	b	b	c	c	
output	0	0	1	0	1	1	

output is 0010 11

b)