



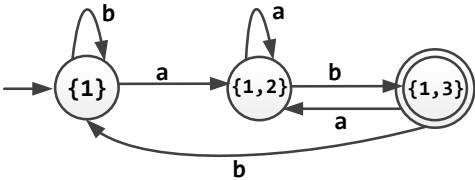
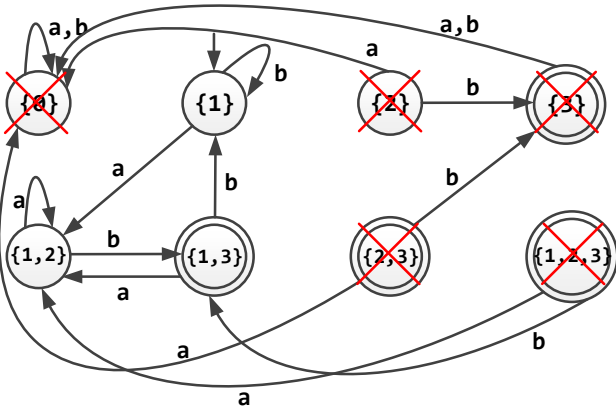
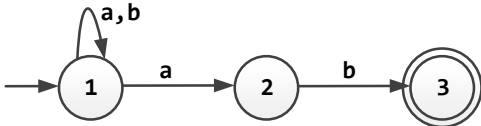
CEVAPLAR

1. “ab ile biten tüm kelimelerin dili” için :

- a) RE yazınız. (5P)
- b) nondeterministic FA çiziniz. (10P)
- c) nondeterministic FA’i deterministic FA’e çeviriniz. (15P)

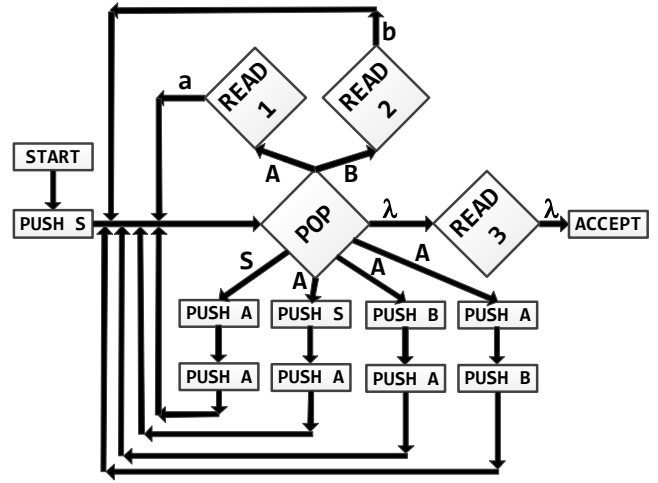
İpucu → Hem nondeterministic FA hem de deterministic FA 3 durumludur.

$(a+b)^* ab$

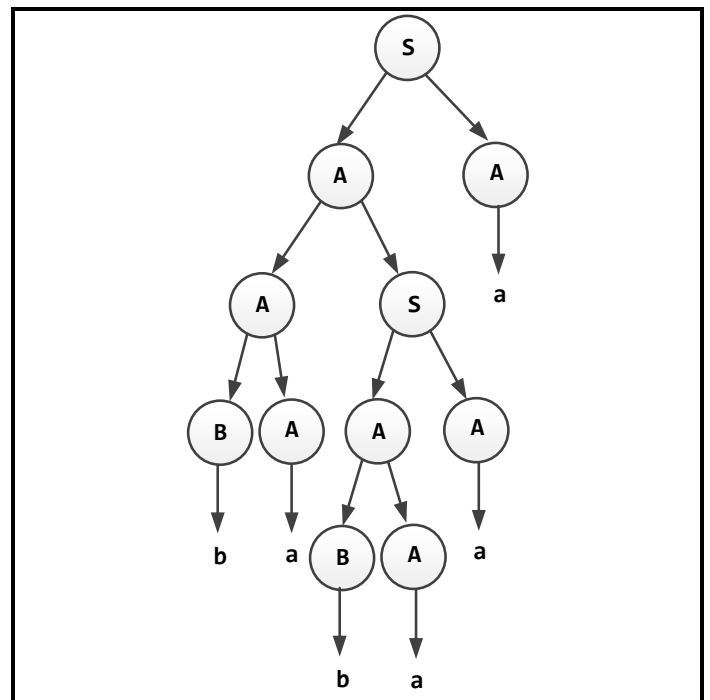


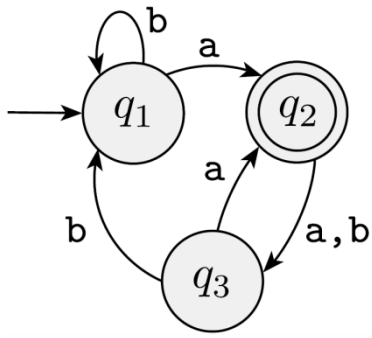
$S \rightarrow AA$
 $A \rightarrow AS \mid AB \mid BA \mid a$
 $B \rightarrow b$

2. Yukarıdaki gramerin aşağıdaki nondeterministic PDA eşdeğerini ve tabloyu kullanarak babaaa kelimesi için parse ağacını çiziniz. (30P)



	State	Stack	Tape	16	Push A	AA	babaaa
01	Push S	S	babaaa	17	Push A	AAA	babaaa
02	Pop	λ	babaaa	18	Pop	AA	babaaa
03	Push A	A	babaaa	19	Push A	AAA	babaaa
04	Push A	AA	babaaa	20	Push B	BAAA	babaaa
05	Pop	A	babaaa	21	Pop	AAA	babaaa
06	Push S	SA	babaaa	22	Read 2	AAA	babaaa
07	Push A	ASA	babaaa	23	Pop	AA	babaaa
08	Pop	SA	babaaa	24	Read 1	AA	babaaa
09	Push A	ASA	babaaa	25	Pop	A	babaaa
10	Push B	BASA	babaaa	26	Read 1	A	babaaa
11	Pop	ASA	babaaa	27	Pop	λ	babaaa
12	Read 2	ASA	babaaa	28	Read 1	λ	babaaa
13	Pop	SA	babaaa	29	Pop	λ	babaaa
14	Read 1	SA	babaaa	30	Read 3	λ	babaaa
15	Pop	A	babaaa	31	Accept	λ	babaaa

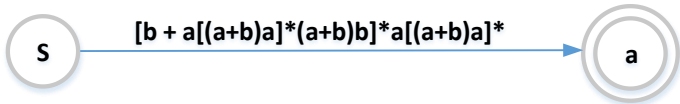
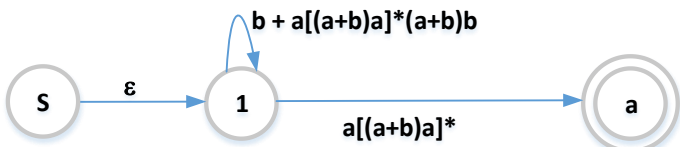
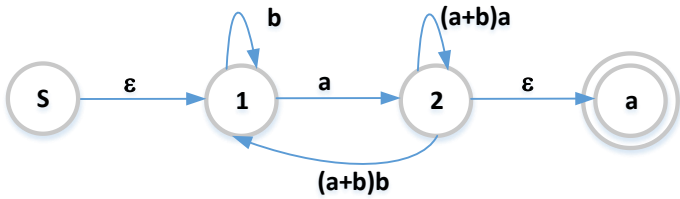
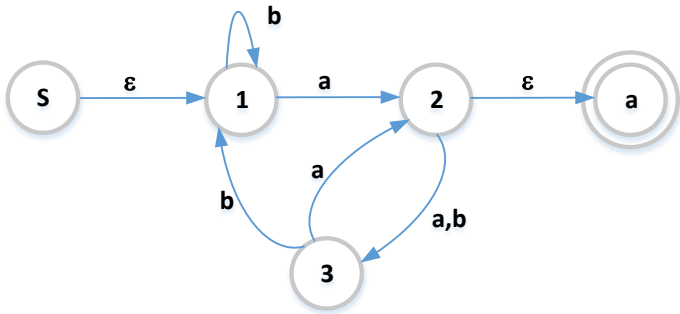




3. Yukarıdaki FA'deki durumları :

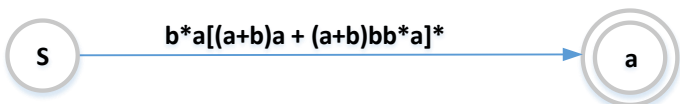
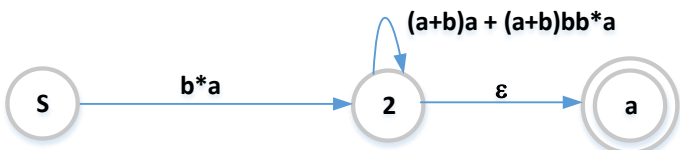
a) q3, q2, q1 sırasında silerek RE elde ediniz. (10P)

$$[b + a[(a+b)a]^*(a+b)b]^* a[(a+b)a]^*$$



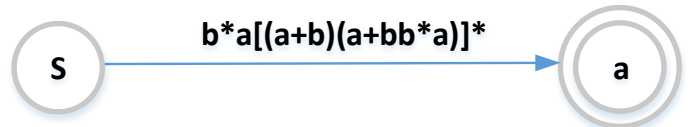
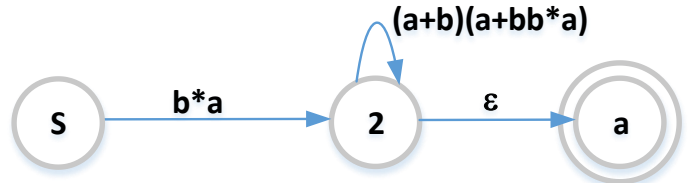
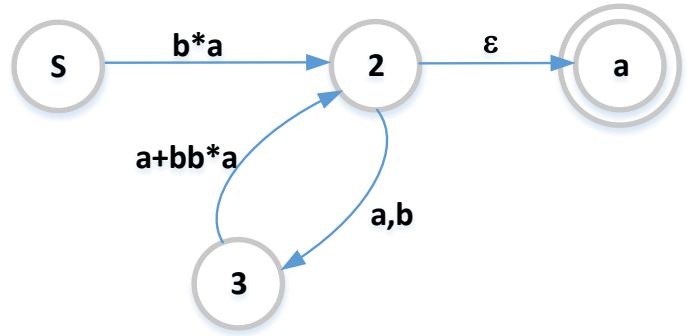
b) q3, q1, q2 sırasında silerek RE elde ediniz. (10P)

$$b^* a[(a+b)a + (a+b)bb^* a]^*$$



c) q1, q3, q2 sırasında silerek RE elde ediniz. (10P)

$$b^* a[(a+b)(a+bb^* a)]^*$$



d) q2, q3, q1 sırasında silerek RE elde ediniz. (10P)

$$[b + a(a+b)[a(a+b)]^* b]^* [a + a(a+b)[a(a+b)]^* a]$$

