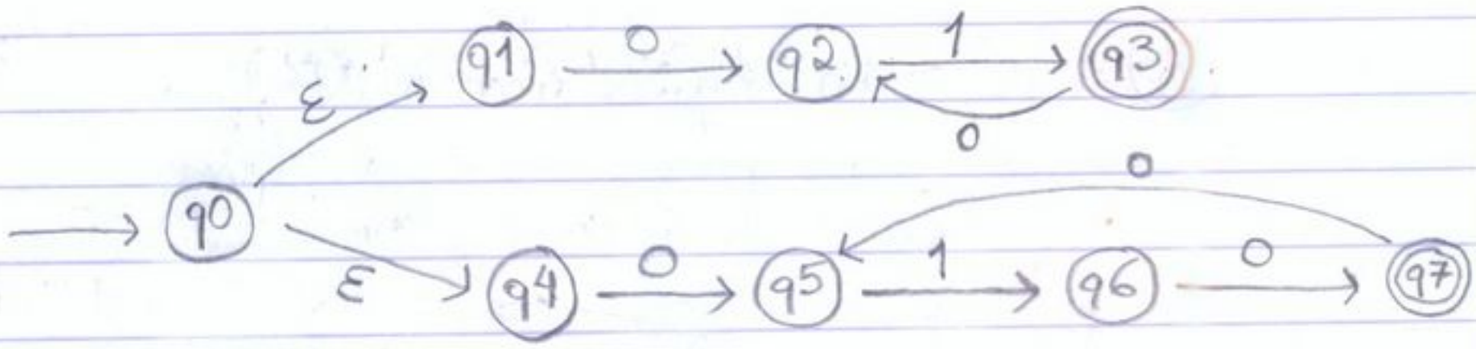
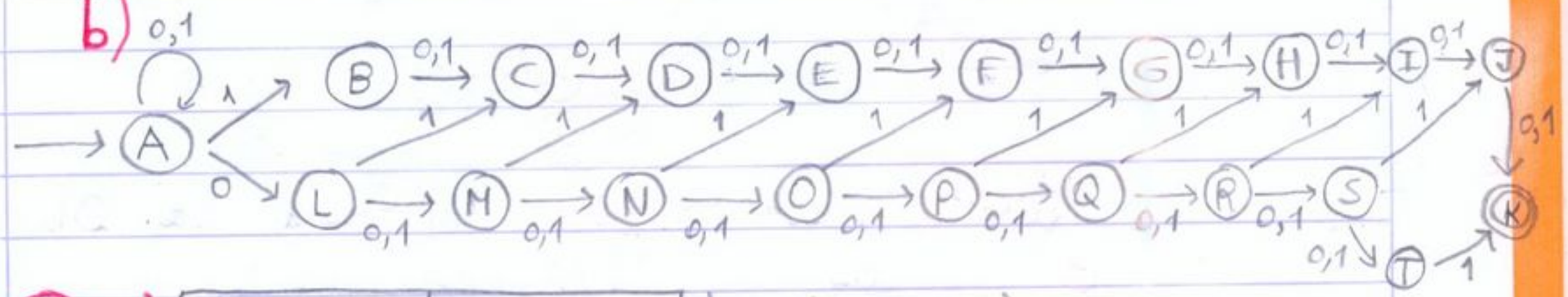
Prática 4 - ε-NFAs (ε-Transitions)

① a)



b)



② a)

Estado	Fecho-ε
p	{p, q, r}
q	{q}
r	{r}

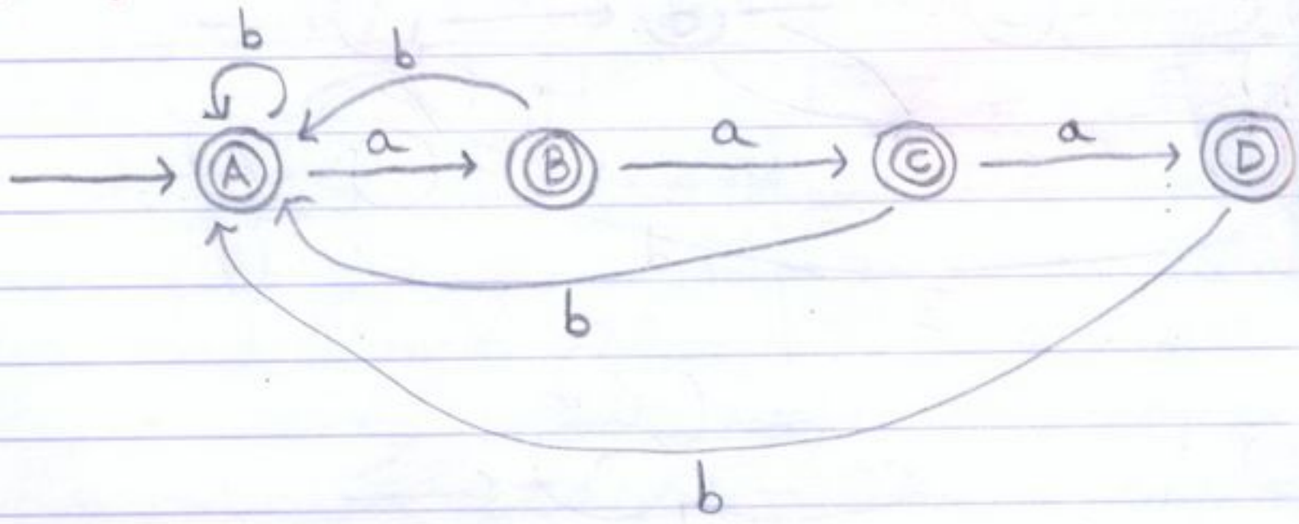
b) ε, a, b, c, aa, ab, ae, ba, bb, be, ca, cb, ce, aaa, aab, aac, aba, aca, abb, abc, ace, acb, bab, bcb, baa, bac, bbe, bcc, bca, ccc, cca, ccb, cac, cbc, caa, cab, cbb, cba

ε (string vazia) ✓
a ✓ b ✓ c ✓
aa ✓ ab ✓ ac ✓
ba ✓ bb ✓ be ✓
ca ✓ cb ✓ cc ✓
aaa ✓ aab ✓ aac ✓
aba ✓ aca ✓ abb ✓
abc ✓ acc ✓ acb ✓
bbb X bba X bbc ✓
bab ✓ bcb ✓ baa ✓
bac ✓ bcc ✓ bca ✓
ccc ✓ cca ✓ ccb ✓
cac ✓ cbc ✓ caa ✓
cab ✓ cbb ✓ cba ✓

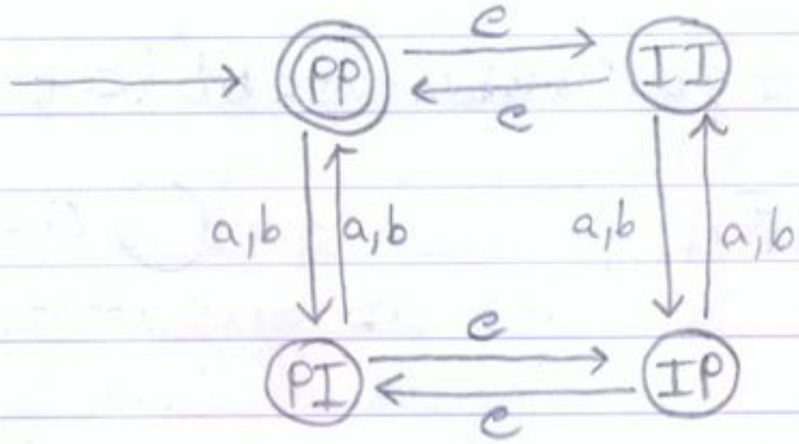
c)

	a	b	c
→* {p, q, r}	{p, q, r}	{q, r}	{p, q, r}
* {q, r}	{p, q, r}	{r}	{p, q, r}
* {r}	∅	∅	{p, q, r}
∅	∅	∅	∅

③ a)



b)



PP → nº de "e" par e length par
II → nº de "e" impar e length impar
PI → nº de "e" par e length impar
IP → nº de "e" impar e length par

(4) Deve-se determinar o Fecho-E de cada estado.

Estado	Fecho-E
p	{p, r, q}
q	{q}
r	{r, q}
s	{s}

Podemos agora converter em DFA:

	a	b	c	d
→*{p, q, r}	{p, q, s, r}	{q, s, r}	{p, q, r}	{p, q, r, s}
*{p, q, s, r}	{p, q, s, r}	{p, q, s, r}	{p, q, r}	{p, q, r, s}
*{q, s, r}	{q, s, r}	{p, q, r}	{p, q, r}	{p, q, r, s}