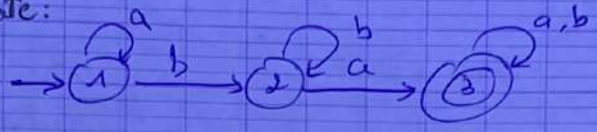
Exercice 3:

Question 1/

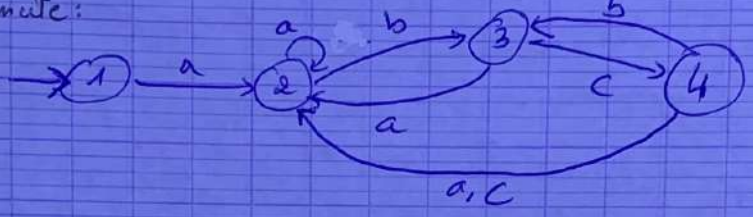
a/ Expression Regulière : $(a|b)^* \; b \; a \; (a|b)^*$

Automate:



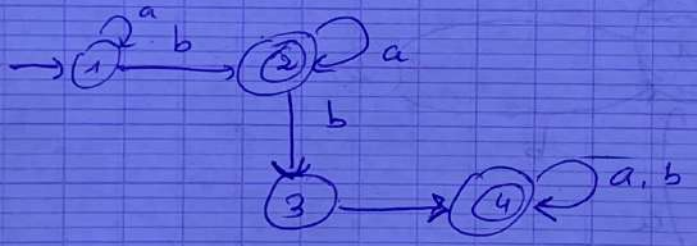
b/ Exp. R: $a \; (a|b|c)^* \; b \; c$

Automate:



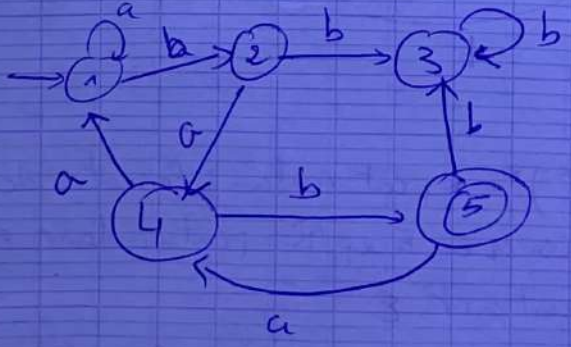
c/

Exp. R: $a \,|\, (a^* \, b \, a^*) \,|\, (a^* \, b \, a^* \, b \, a^* \, b \, (a|b)^*)$



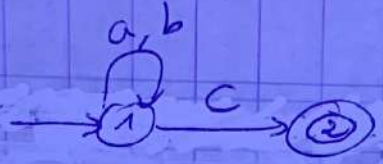
d/ Exp R: $a^* \, b \, a^* \, b \, a^*$

e/ Exp R: $(a|b)^* \; (bab \,|\, bbb)$

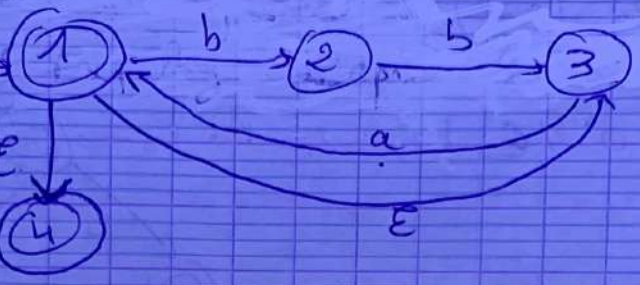


Exercice 6

a/

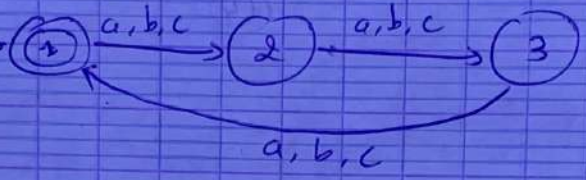


b/

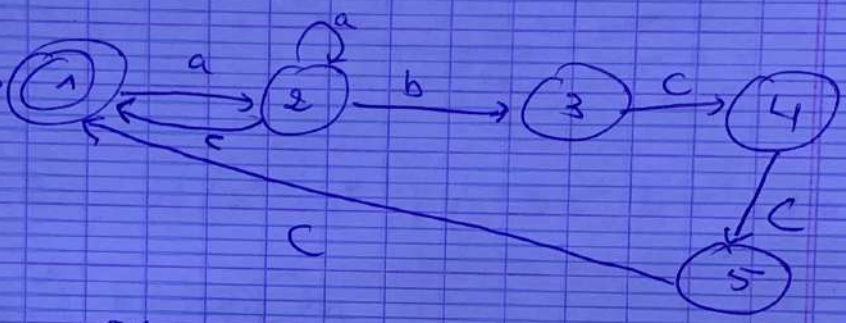


Exercice 4:

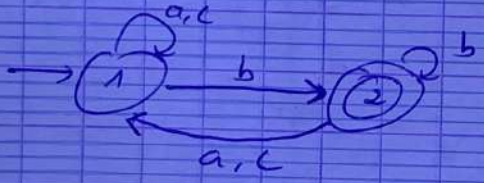
a/



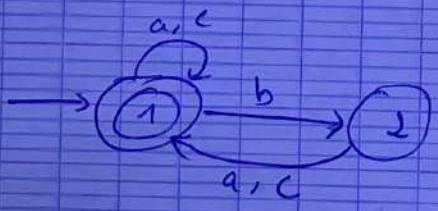
b/



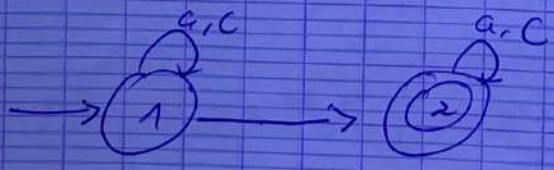
c/



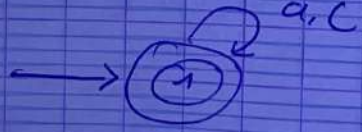
d/



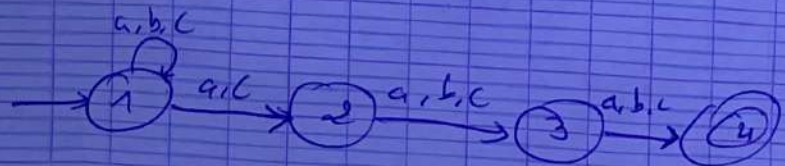
e/



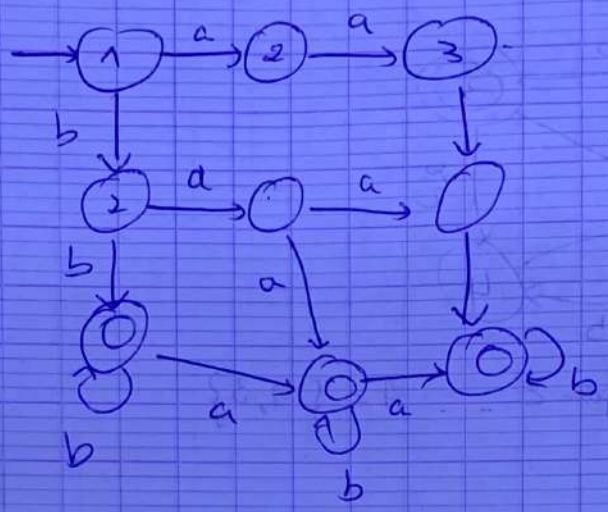
f/



g/

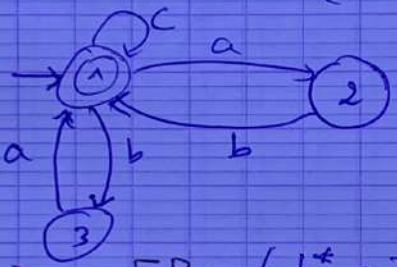


3/



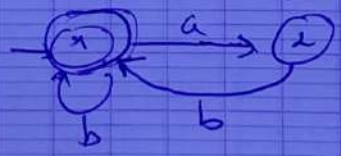
Question 2: ER: $c^* + ((ab)^+ a) + ((ba)^+ b)$

Automate



Question 3, ER: $(b^* a?) + (b^* a b^+)^*$

Automate:



Question 3:

+ 1ère ER: oui, car $(a + ba^*)^*$ accepte ε donc l'ER accepte ε ou au moins b
+ 2ème ER: non, accepte au moins 1 ou b
+ 3ème ER: non; car il ne contient pas fermeture de Kleene
+ 4ème ER: oui.