Exercice 1

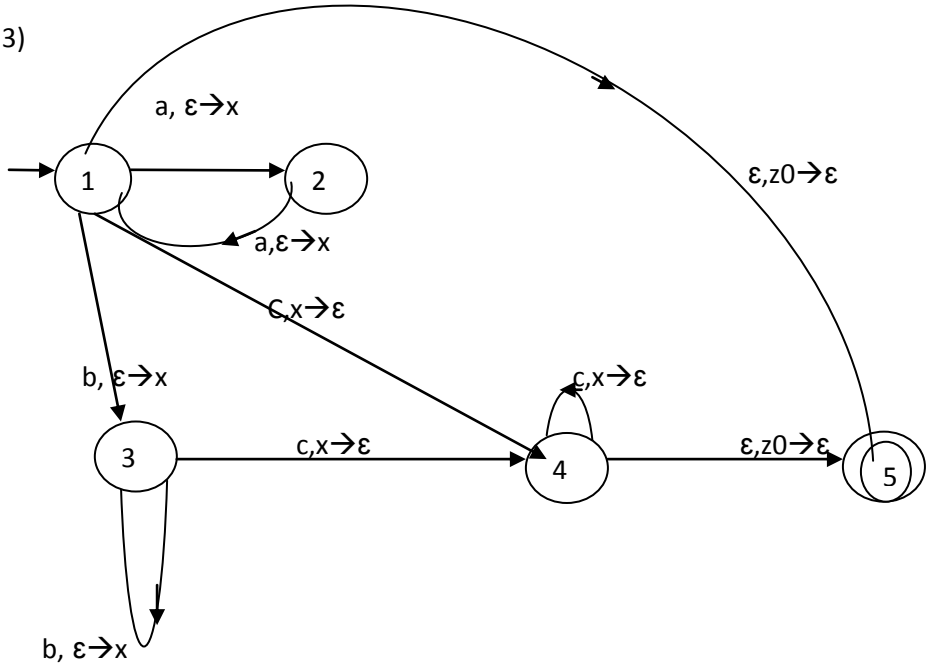
1)

S→aaScc|bAc|ε

A→bAc| ε

2) S→aaScc→aabSccc>aabccc

3)



4) (1,aabccc,z0)⊢(2,abccc,xz0) ⊢ (1,bccc,xxz0)⊢ (3,ccc,xxxz0)⊢ (4,cc,xxz0)⊢ (4,c,xz0)

⊢ (4,ε,z0) ⊢ (5,ε,ε)

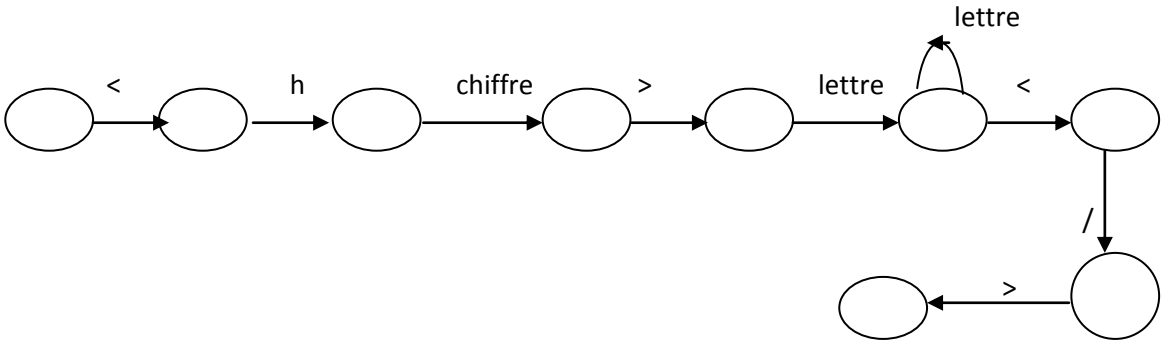
Exercice 2 :

Balise→ ‘<’ ‘h’ chiffre ‘>’ texte ‘<’ ‘/’ ‘h’ chiffre ‘>’

Chiffre→1|2|3|4|5|6

Texte→(lettre)+

Lettre→[a-z|A-Z]



Exercice 3 :

S→SxAS|y

A→yxSA|ySA|x|y|ε

1)

S→SxAS→yxAS→yxySAS→yxyyAS→yxyyySAS→yxyyyyxy

2)

S→yS'

S'→xASS'|ε

A→yxSA|ySA|x|y|ε

3)

S→yS'

S'→xASS'|ε

A→yA'|x|ε

A'→xSA|SA|ε

Exercice 4:

1)

P(S)={ { }

P(C)= {(}+ pr(C') {, id, int, float,ε}

P(C')=p(A) /{ε}+p(D)/{ε}+{ε}={ id, int, float,ε}

P(A)= p(B)/{ε}={id}

P(D)={ int, float}

P(B)={id}

P(E)= p(B)/{ε}={id}

P(E')={+,-,ε}

S(S)= {$}

S(C)= { } }

S(C')=suiv (C)+ suiv(C')= { } }

S(A)=pr(C')\{ε}+ suiv(C')={ id, int, float , } }

S(D)= pr(C')\{ε}+ suiv(C')={ id, int, float , } }

S(B)={=}+{;}+p(E')\{ε}+suiv(E)+suiv(E')={=, ; , +, -}

S(E)={;}

S(E')=suiv(E)+suiv(E')={;}

2)

	{	}	id	int	float	;	+	=	-	$
S	S → {C}									
C	C →{C}C'	C→ε	C→C'	C→C'	C→C'					
C'		C'→ε	C→AC'	C'→DC'	C→DC'					
A			A→B=E;							
B			B→id							
D				D →int B;	D→float B;					
E			E→BE'							
E'						E'→ε	E'→+ B E'		E'→- B E'	

3)

Pile	Entrée	Sortie
$S	{int id;id=id+id;}$	
$}C{	{int id;id=id+id;}$	S → {C}
$}C	int id;id=id+id;}$	C→C'
$}C'	int id;id=id+id;}$	C'→DC'
$}C'D	int id;id=id+id;}$	D→int B;
$}C';B int	int id;id=id+id;}$	
$}C';B	id;id=id+id;}$	B→id
$}C';id	id;id=id+id;}$	
$}C';	;id=id+id;}$	
$}C'	id=id+id;}$	C'→AC'
$}C'A	id=id+id;}$	A→B=E;
$}C';E=B	id=id+id;}$	B→id
$}C';E=id	id=id+id;}$	
$}C';E=	=id+id;}$	
$}C';E	id+id;}$	E→BE'
$}C;'E'B	id+id;}$	B→id
$}C'E'id	id+id;}$	E'→+BE'
$}C';E'B+	+id;}$	
$}C';E'B	id;}$	B→id
$}C';E'id	id;}$	
$}C';E'	;}$	E'→ε

$}C’;	;}$	
$}C’	}$	C’→ε
$}	}$	
$	$	

4) S→{C}→{C’}→{DC’}→{int B;C’}→{int id ;C’}→{int id;AC’}→{int id;B=E;C’}→{int id;id=E;C’}→{int id;id=BE’;C’}→{int id;id=idE’;C’}→{ int id;id=id+BE’;C’}→{ int id;id=id+idE’;C’}→{ int id;id=id+id;C’}→{ int id;id=id+id;}