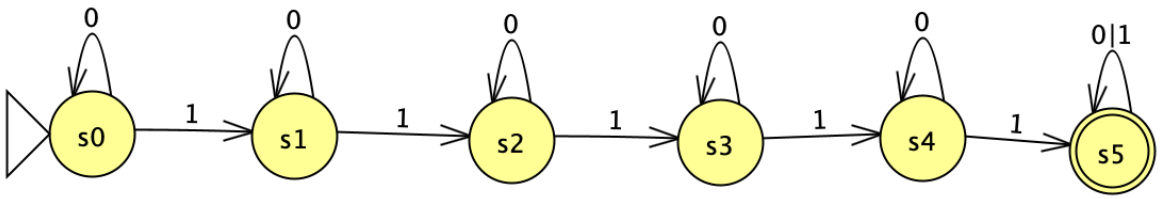
Question 1



Question 2

E := bX

X := +aX

| ε

Question 3

S -> aX

X -> a

| b

| ε

Question 4

	Stack	Input	Action
1	$	tuwvxtw $	Push(A);
2	A$	tuwvxtw $	Pop(); Push(tB'D);
3	tB'D$	tuwvxtw $	Pop(); next++;

4	B'D$	uwvxtw $	Pop(); Push(uwB);
5	uwBD$	uwvxtw $	Pop(); next++;
6	wBD$	wvxtw $	Pop(); next++;
7	BD$	vxtw $	Pop(); Push(ε);
8	εD$	vxtw $	Pop();
9	D$	vxtw $	Pop(); Push(vD');
10	vD'$	vxtw $	Pop(); next++;
11	D'$	xtw $	Pop(); Push(xBD');
12	xBD'$	xtw $	Pop(); next++;
13	BD'$	tw $	Pop(); Push(tB');

14	tB'D'$	tw$	Pop(); next++;
15	B'D'$	w$	Pop(); Push(wB);
16	wBD'$	w$	Pop(); next++;
17	BD'$	$	Pop(); Push(ε);
18	εD'$	$	Pop();
19	D'$	$	Pop(); Push(ε);
20	ε$	$	Pop();
21	$	$	Done

Question 5

#	Parse Stack	Look Ahead	Unscanned	Action
0	empty	id	+ id * id	Start
1	id	+	id * id	Shift

2	F	+	id * id	Reduce "id" to "F"
3	T	+	id * id	Reduce "F" to "T"
4	E	+	id * id	Reduce "T" to "E"
5	E +	id	* id	Shift
6	E + id	*	id	Shift
7	E + F	*	id	Reduce "id" to "F"
8	E + T	*	id	Reduce "F" to "T"
9	E + T *	id	empty	Shift
10	E + T * id	empty	empty	Shift
11	E + T * F	empty	empty	Reduce "id" to "F"
12	E + T	empty	empty	Reduce "T*F" to "T"
13	E + T	empty	empty	Reduce "E+T to "E"
14	E	empty	empty	Accept