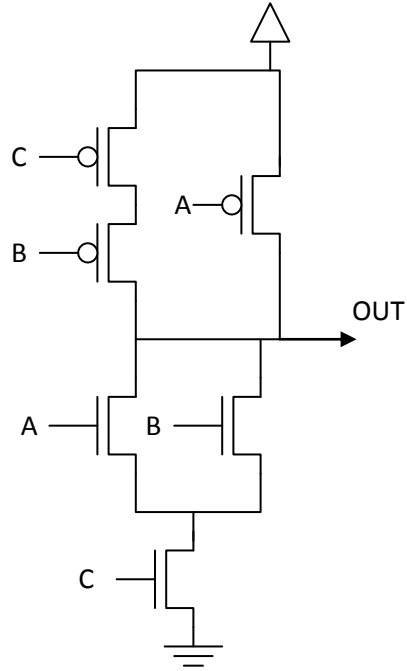


Name: \_\_\_\_\_ uname: \_\_\_\_\_

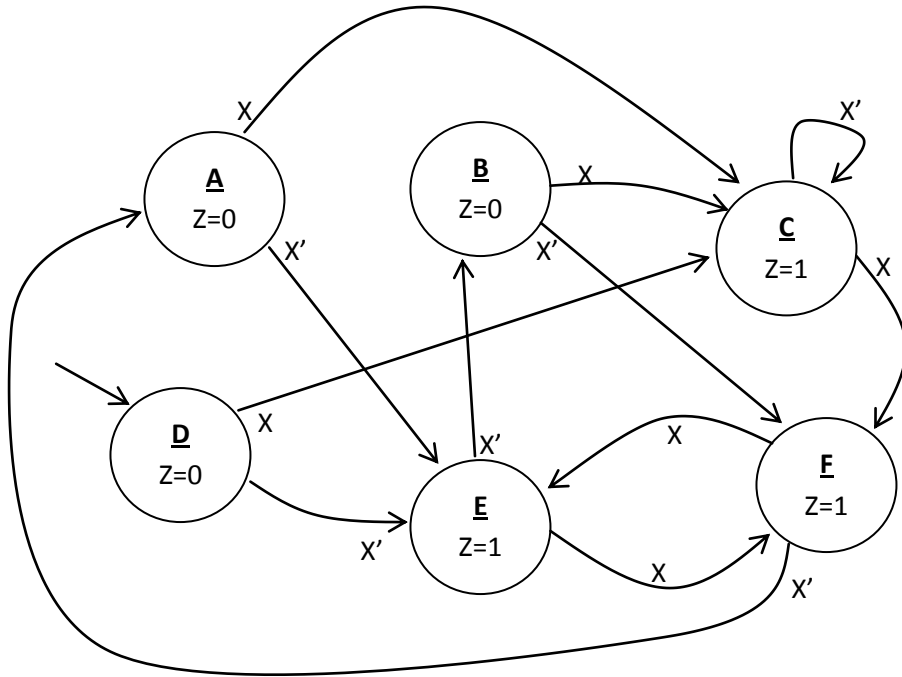
- 1) Fill in the following truth table with either "1", "0", "Hi-Z" or "Smoke" (the last if OUT is connected to both Vcc and Ground). **[40 points, -6 per wrong or blank box, minimum 0]**

A	B	C	OUT
0	0	0	
0	0	1	
0	1	0	
0	1	1	
1	0	0	
1	0	1	
1	1	0	
1	1	1	

**Bonus question:** Design an XOR gate using as few transistors as possible.



2) Reduce the number of states in the state transition diagram as much as possible using the partitioning method. Show your work and draw the reduced state diagram. [60 points]



<b>A</b>					
<b>B</b>					
<b>C</b>					
<b>D</b>					
<b>E</b>					
	<b>F</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>