hw3

3.53

\ cycle	0	1	2	3	4	5	6	7
D2	0	1	1	1	1	0	0	0
D1	0	1	1	0	0	1	1	0
D0	0	1	0	1	0	1	0	1

two-time clock, and four-time clock.

3.61
a.

S1	S0	X	Z	S1'	S0'
0	0	0	1	0	0
0	0	1	1	0	1
0	1	0	0	1	0
0	1	1	0	0	0
1	0	0	0	0	1
1	0	1	0	1	0
1	1	0	0	0	0
1	1	1	0	0	0

b.

S0=1,s1=1,z=0

x=0/1

S0=0,s1=0,z=1   x=0

x=1   x=1

S0=1,s1=0,z=0

x=0   x=0

S0=0,s1=1,z=0   x=1
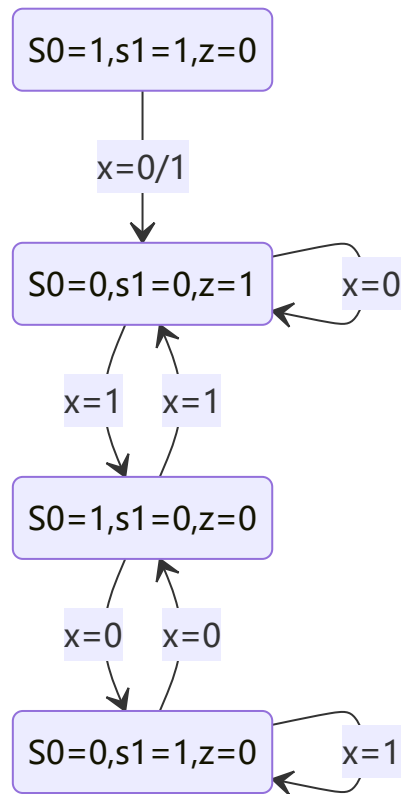
4.1

Memory: storage of information

Processing Unit: computation of information

Input: devices of getting information into the computer

Output: devices of getting information out of the computer

Control Unit: ensure all the parts finish their tasks correctly and at the correct time

4.3

The program counter does not maintain a count of any sort. And the information in it is the address of the next instruction to be processed, so "Instruction Pointer" is more proper.

4.8

a. 8

b. 7

c. 3

4.10

	Fetch Instruction	Decode	Evaluate Address	Fetch Data	Execute	Store Result
PC	0001,0110,1100				1100	
IR	0001,0110,1100					
MAR	0001,0110,1100			0110		
MDR	0001,0110,1100			0110		