3.38

Address is the identity number of memory locations where a data is stored.

Addressability is the number of bits stored in each memory location.

3.40

a. 4

b. 4

c. D[0] = 1, D[1] = D[2] = D[3] = 0.

3.53

	cycle 0	cycle 1	cycle 2	cycle 3	cycle 4	cycle 5	cycle 6	cycle 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

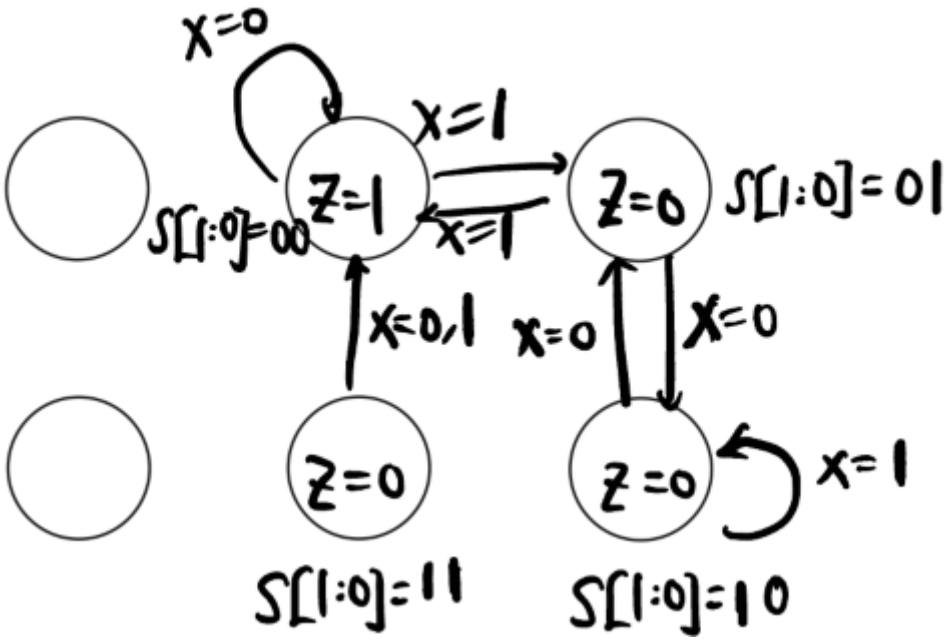
The circuit can generate clocks having different frequencies.

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.



4.1

- Memory: store data and instructions.
- Input: get information into computer.
- Output: display the results of processing or other information.
- Processing Unit: carry out the actual processing of information.
- Control Unit: be in charge of making all the other parts of the computer work together.

4.7

60 opcodes need at least $log_2 64 = 6$ bits.

32 registers need at least $log_2 32 = 5$ bits.

There are 32 - 6 - 5 - 5 = 16 bits left for IMM, so the range of the immediate is 2^{-15} to $2^{15} - 1$