

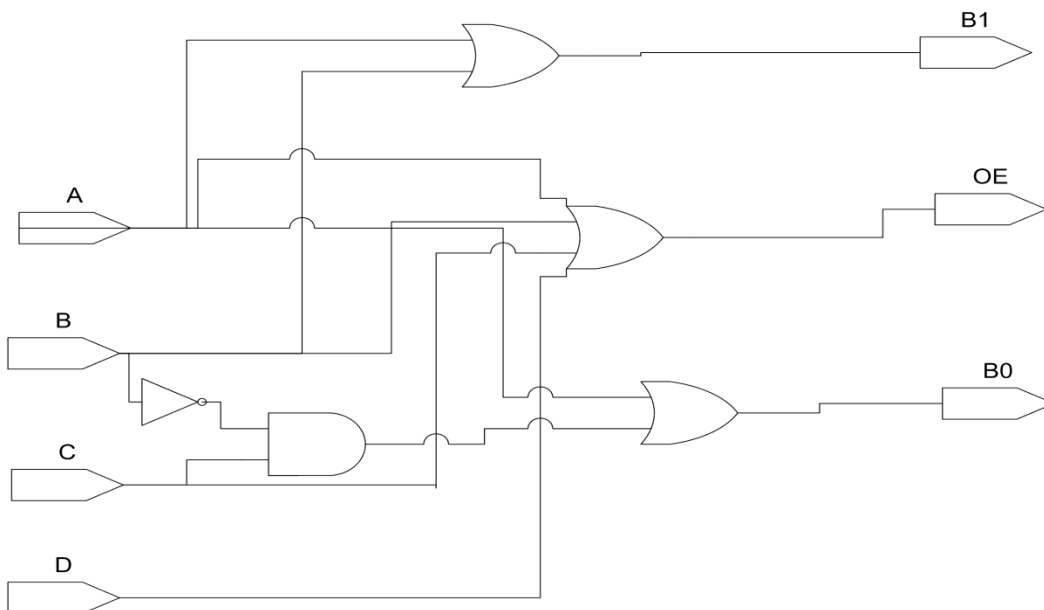
1.
 - a. 11111100
 - b. 00000100
 - c. 11110111
 - d. 11000011
 - e. 01111111
 - f. Not Possible
 - g. 10000000
 - h. 00000000
 - i. 11111101

2.
 - a. -111
 - b. -17
 - c. 145
 - d. 9
 - e. 9
 - f. -1
 - g. -1
 - h. -1

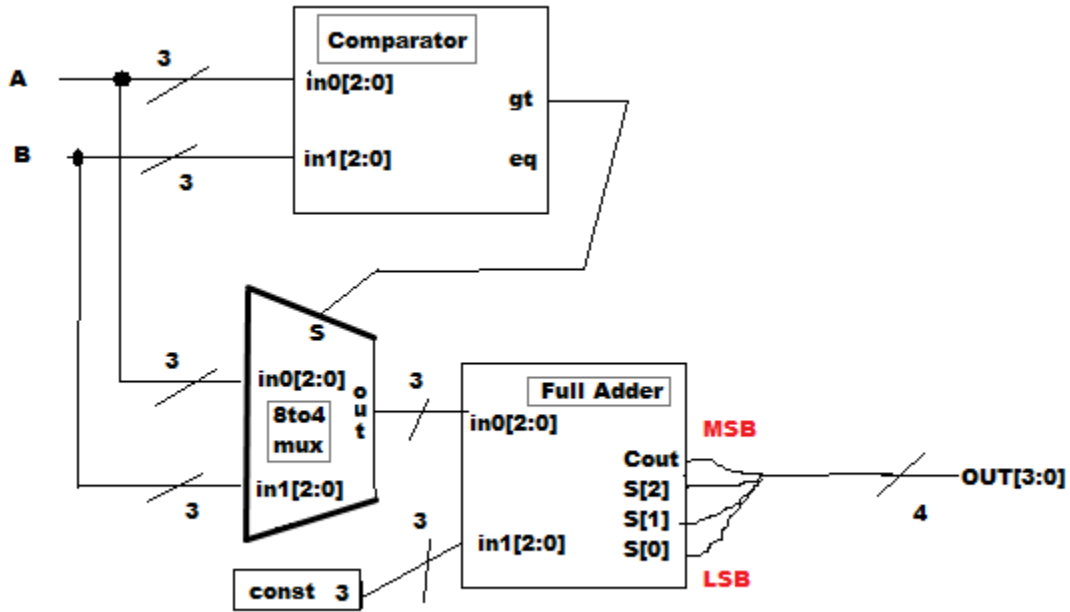
3. Note: Vertical line splits the 6 bits on the right, from the 7th bit on the left
 - a. 1|000000
 - b. 1|111000
 - c. 1|100000
 - d. |100000
 - e. 1|010011
 - f. 1|011110

4.
 - a. Multiple correct answers; 1 correct is $!b!c+a!cd$
 - b. Multiple correct answers; 1 correct is $!a!b+!a!b!c+ab!c$

5. Note: ABCD are the lines coming in (highest to lowest priority order is A, B, C, D). B1 is the most significant bit of the output, and B0 is the least significant bit.

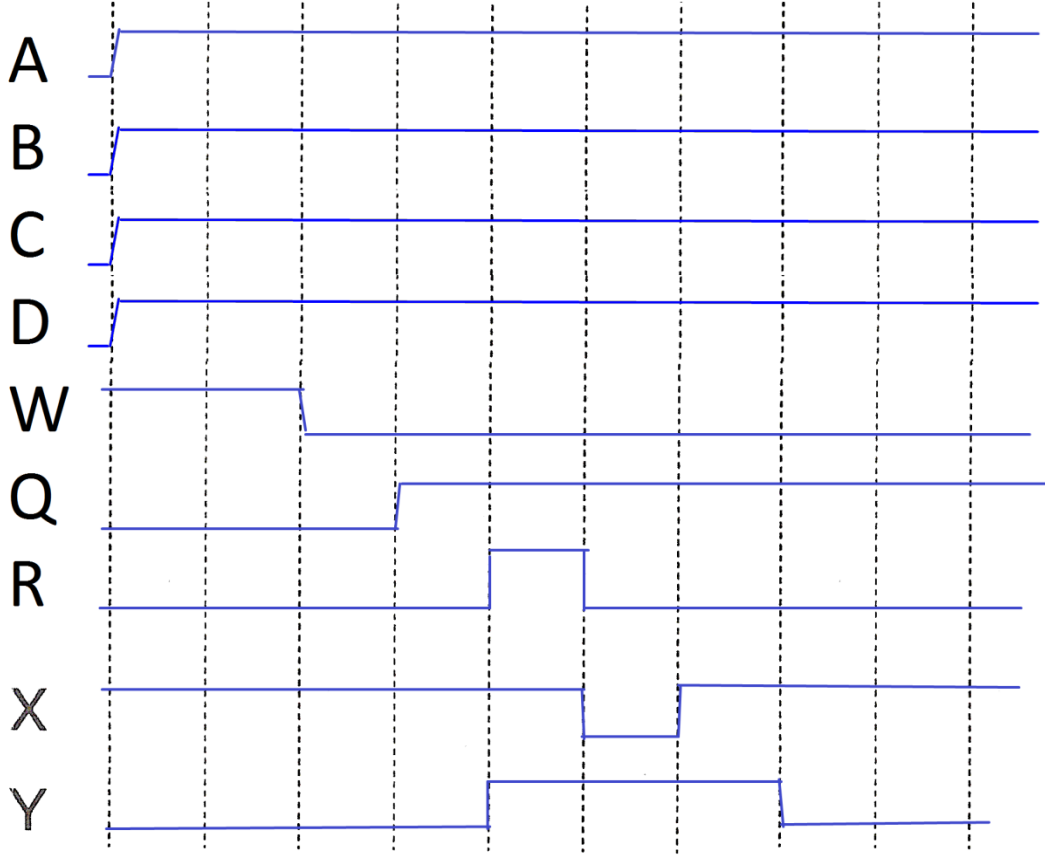


6. $S = \sum(1,2,4,7)$
 $Co = \sum(3,5,6,7)$
7. Note: out of the 3 bit adders is 4 bit because of the 3 sum bits plus the carry out bit
 Note2: gt means $in_0 > in_1$



- 8.
- a. 350ps
 - b. Note: In the picture below, I used periods at the top. 1 period = 50ps.
 - i. Note: because of typo, we will take b,c -> 1 OR all -> 1 (shown below)

i.) 0 1 2 3 4 5 6 7 8 9



ii.) 0 1 2 3 4 5 6 7 8 9

