

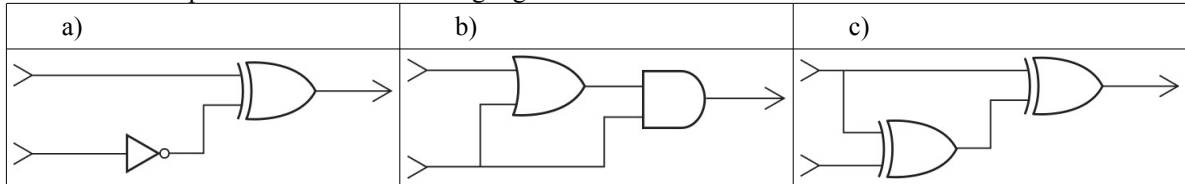


Sheet 3

I Solve the following *Review Problems* from *Computer Science: An Overview*:

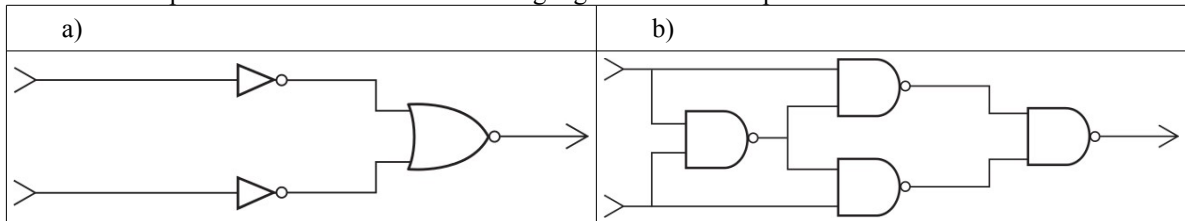
• **1.1**

Determine the output of each of the following logical circuits.



• **1.2**

What Boolean operation does each of the following logical circuits compute?



• **1.6**

How many cells can be in a computer's main memory if each cell's address can be represented by two hexadecimal digits? What if four hexadecimal digits are used?

• **1.8**

What is the value of the most significant bit in the bit patterns represented by the following hexadecimal notations?

a)	b)	c)	d)
8F	FF	6F	1F

• **1.9**

Express the following bit patterns in hexadecimal notation:

a)	b)	c)
101000001010	110001111011	000010111110



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II Answer the following questions:

1. If your Internet connection speed is 4 Mbit/s, how long does it take to download a 1 GB movie?
2. How many bits do you need to address 12 drawers?
3. Give a definition/an example for each of the following:
 - a) *Bit*
 - b) *Byte*
 - c) *Boolean Operation*