

Digital Logic Gates Question Sheet

Answer the following questions on the worksheet.

Part 1

Fill in the blanks

1. In Boolean Logic the numbers 1 and 0 represent _____ and _____.
2. When there are two inputs to a logic gate, the truth table will have _____ lines.
3. The output of the AND gate is 1 when _____ of the inputs are true.
4. The output of the OR gate is 1 when _____ of the inputs are true.
5. The output of the NOT gate is 1 when the input is _____.
6. The output of the NAND gate is 0 when _____ of the inputs are _____.
7. The output of the NOR gate is 1 when _____ of the inputs are _____.
8. "One or the other but not both" describes the operation of the _____ gate.
9. The truth table below corresponds to the _____ gate.

A	B	X
0	0	1
0	1	0
1	0	0
1	1	0

10. The truth table below corresponds to the _____ gate.

A	B	X
0	0	0
0	1	0
1	0	0
1	1	1

11. The truth table below corresponds to the _____ gate.

A	B	X
0	0	0
0	1	1
1	0	1
1	1	0

12. The truth table below corresponds to the _____ gate.

A	B	X
0	0	0
0	1	1
1	0	1
1	1	1

Part 2

Answer the following questions in the space provided:

13. Explain the difference between the Inclusive OR gate and the Exclusive OR gate.

14. Which gates have a truth table with three zeros and one number 1 in the output (x) column?

15. Which gates have a truth table with three ones and one zero in the output column?

16. Which gates have a truth table with two zeros and two ones in the output column?

Part 3

On the next page complete the chart by filling in the symbol, and truth table for each of the eight logic gates.