

Pre-Lab 1

Problem 1: Logic Gate Truth Tables

- **NOT**

A	Output
0	1
1	0

- **AND**

A	B	Output
0	0	0
0	1	0
1	0	0
1	1	1

- **OR**

A	B	Output
0	0	0
0	1	1
1	0	1
1	1	1

- **NAND**

A	B	Output
0	0	1
0	1	1
1	0	1
1	1	0

- **NOR**

A	B	Output
0	0	1
0	1	0
1	0	0
1	1	0

- **XOR**

A	B	Output
0	0	0
0	1	1
1	0	1
1	1	0

Problem 2: The Lab Station

- 2.1. **+5V** and **GND** are the source used to power and ground an IC (integrated circuit).
- 2.2. **Bus strips** are the red and blue lines which use the red line for power (+5V) and the blue line for ground.
- 2.3. Bus strips are useful because bus strips are use to supply power to the circuit.
- 2.4. Hole **A1** is connected to hole **B1**.
- 2.5. Hole **A3** is not connected to hole **A5**.
- 2.6. Hole **E5** is not connected to hole **G5**.
- 2.7. Hole **H1** is connected to hole **J1**.
- 2.8. **One** of the **MOST** appropriate for Boolean logic (true/false or 0/1 logic) is The 3-Way Switch Panel.

Problem 3: Reading Integrated Circuit (IC) Chip Pinouts

- 3.1. Pin 3 in the **(7400) NAND** chip is an **output**.
- 3.2. Pin 3 in the **(7402) NOR** chip is an **input**.
- 3.3. Pin 11 in the **(7404) NOT** chip is an **input**.
- 3.4. There are **4** gates in one **(7408) AND** chip.
- 3.5. Pin 7 on the **(7486) XOR** chip is **GND**.