**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**

1. **+5V** and **GND** are the source used to power and ground an IC (integrated circuit).
2. **Bus strips** are the red and blue lines which use the red line for power (+5V) and the blue line for ground.
3. Bus strips are useful because bus strips are use to supply power to the circuit.
4. Hole **A1** is connected to hole **B1.**
5. Hole **A3** is not connected to hole **A5**.
6. Hole **E5** is not connected to hole **G5.**
7. Hole **H1** is connected to hole **J1**.
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**

1. Pin 3 in the **(7400) NAND** chip is an **output**.
2. Pin 3 in the **(7402) NOR** chip is an **input**.
3. Pin 11 in the **(7404) NOT** chip is an **input**.
4. There are **4** gates in one **(7408) AN**D chip.
5. Pin 7 on the **(7486) XOR** chip is **GND**.