**Assignment 2**

**Due, Wednesday, September 21, 2022 for maximum 100%**

**Thursday, September 22, 2022 for maximum 90%**

**Friday, September 23, 2022 for maximum 80%**

**Saturday, September 24, 2022 for maximum 70%**

**Deliverables**

To complete this assignment, submit this completed document to Webcourses.

All steps must be shown the truth table to receive full credit. If **ONLY** the final answer is provided a **MAXIMUM** of **50%** will be awarded for the assignment final grade.

**Precedence**

1. NOT has precedence over AND
2. AND has precedence over OR
3. When computing an expression
4. Parentheses
5. Compute NOTs
6. Compute ANDs
7. Compute ORs

**Example**

1. Given Boolean function **F = x + y'z**
   1. Transform from an algebraic expression into a logic diagram

x

y F

z

* 1. Create the truth table for each computational step based on precedence

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **x** | **Y** | **z** | **y'** | **y’z** | **x + y’z (F)** |
| 0 | 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 0 | 0 |
| 0 | 1 | 1 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 0 | 1 |
| 1 | 1 | 1 | 0 | 0 | 1 |

**Assignment**

1. Given Boolean function **F1 = xyz'**
   1. Transform from an algebraic expression into a logic diagram
   2. Create the truth table for each computational step based on precedence
2. Given Boolean function **F2 = xy' + z**
   1. Transform from an algebraic expression into a logic diagram
   2. Create the truth table for each computational step based on precedence
3. Given Boolean function **F3 = xy' + x'z**
   1. Transform from an algebraic expression into a logic diagram
   2. Create the truth table for each computational step based on precedence
4. Given Boolean function **F4 = x'y'z + x'yz + xy'**
   1. Transform from an algebraic expression into a logic diagram
   2. Create the truth table for each computational step based on precedence