**Circuits Assignment #2**

**COSC1309 Spring 2017**

Create a report with the answers to the three problems below. Create a cover page for your report and turn in everything as one packet. Be sure all your answers are explained precisely and labelled accurately.

1. Build a circuit that will work as dictated by the following truth table. Test your circuit using the Logic Gates applet from the Brookshear website. See instructions on how to use this app on BlackBoard,” Course Files” page: “How to use the Brookshear apps”. Paste a picture of your circuit into this document. (Open the applet in a new window and build your circuit. Use Alt-PrtScn to copy the window to the clip board or use the snipping tool found in the start button menu. Paste into this document.)

|  |  |  |  |
| --- | --- | --- | --- |
| ***Input 1*** | ***Input 2*** | ***Input 3*** | ***Output*** |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 |

1. Design a circuit that performs just like the AND operation, using only NOR gates. First, give the truth table for the AND operation below. Then, use the process described in #2 to paste your circuit solution below. (Hint: you may need to feed the same input into both input lines of one or more gates.)
2. Give the truth table for the one-bit-column adder circuit (the circuit can be found in appendix B of your book.) Create this circuit in the Logic Gates applet, test it, and then copy it to this document. LABEL all inputs and all outputs correctly.