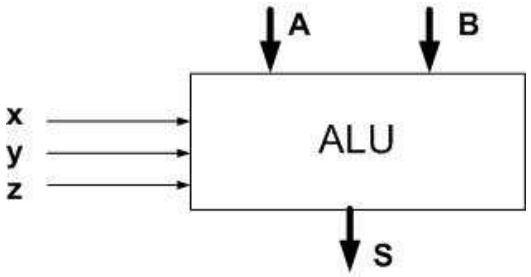
UNC Charlotte, Department of Electrical and Computer Engineering
ECGR 2181, Fall 2009, Homework #8
Due: 10/30/09, at the recitation (100 points)

Show all of your work!!!!! Also, use ONE side of the paper and do not staple.

1. How long did this assignment take you? (Answer truthfully!) (5 points)
2. Consider the simple ALU, below, with the following control listed in the truth table:

z	y	x	S
0	0	0	A + B
0	0	1	A - B
0	1	0	2 * A
0	1	1	0
1	0	0	A
1	0	1	A+1
1	1	0	Reserved
1	1	1	A-1



A and B are eight bits wide, S is nine-bits wide. Each of these operations can be done by using an eight-bit adder and passing the A bus (8 bits) directly from the input of the ALU device to the A input of the adder. The B bus and C_{in} input to the adder will need to be designed.

Using the concepts from the 10/26 and 10/27 classes, design the contents of this ALU.

Please note - this problem is really rather easy. Try not to make it too complex. For example, what is 2 * A the same as? What is a way to make 0 out of A?