Quiz 2

(October 8th @ 5:30 pm)

PROBLEM 1 (35 PTS)
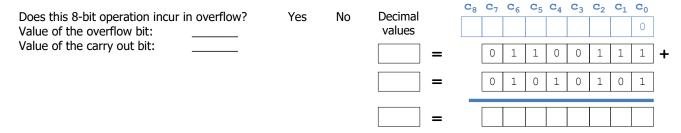
- Complete the following table.

REPRESENTATION			
Decimal	**Sign-and-magnitude**	**1's complement**	**2's complement**
	1101		
		111	
			100
		01101	

- Convert the following decimal number to its 2's complement representation: -14.25 (5 pts)

PROBLEM 2 (30 PTS)

- The figure shows two 8-bit operands represented in 2's complement arithmetic. Perform the signed (2C) 8-bit addition operation, i.e., complete all the carries and summation bits. Also, indicate the corresponding decimal numbers for the 8-bit operands and the 8-bit result.

Does this 8-bit operation incur in overflow?   Yes   No
Value of the overflow bit: _____
Value of the carry out bit: _____

c_8 c_7 c_6 c_5 c_4 c_3 c_2 c_1 c_0

Decimal values

		c_8	c_7	c_6	c_5	c_4	c_3	c_2	c_1	c_0	
										0	
[ ]	=		0	1	1	0	0	1	1	1	+
[ ]	=		0	1	0	1	0	1	0	1	
[ ]	=										

PROBLEM 3 (35 PTS)

- Complete the timing diagram of the circuit shown below: $y = y_3 y_2 y_1 y_0$, $x = x_1 x_0$

z=0 when P=0000