

Name: Answer

Instructions: Do NOT use your book, notes or calculator and answer questions on test page (bottom and back if necessary).

1. Add the following signed 2's complement 8-bit word length numbers and specify if an overflow condition occurred. Show all carry bits. Write all answers in binary and unsigned hexadecimal. (Note parts a - d are binary numbers and part e are hexadecimal.)

a)	00001000	b)	11111100	c)	01111100	d)	01010000	e)	01111000
	10110110		01011101		10110111		10111001	BA	10111010
	+01000101		+00111011		+10101101		+00100110	+36	00110110
	[0]11111011		[0]10011000		[1]01100100		[0]11011111		[0]11110000
	FB <sub>16</sub>		98 <sub>16</sub> overflow		64 <sub>16</sub> overflow		DF <sub>16</sub>		F0 <sub>16</sub>

2. Subtract the following signed 2's complement 4-bit word length numbers and specify if an overflow condition occurred. Show all carry bits. Write all answers in binary and unsigned hexadecimal. (Note parts a - d are binary numbers and part e are hexadecimal.)

a)	b)	c)	d)	e)
0111	1010	1110	1010	C
-0010	-1101	-0011	-0110	-5
1111	0101	1001	0111	1100
0111	1010	1110	1010	0001
1101	0010	1100	1001	1100
[1]0101	[0]1101	[1]1011	[1]0100	[1]0111
5 <sub>16</sub>	D <sub>16</sub>	B <sub>16</sub>	4 <sub>16</sub> overflow	7 <sub>16</sub> overflow