- 0	Unsigned	Signed-Magnitude	Ones Complement	Twos Complement	Biased
56	00111000 (8)	00111000 (8)	00111000 (8)	00111000 (8)	10110111 (8)
178					
1002					
7586					

	Unsigned	Signed-Magnitude	Ones Compliment	Twos Compliment	Biased
56	00111000 (8)	00111000(8)	00111000(8)	00111000(8)	11011011(8)
178	1011 0010 (8)	0 1011 0010	1 0100 1101	1 0100 1110	11011 0001
1002	11 1110 1010	011 1110 1010	100 0001 0101	100 0001 0110	111 1110 1001
7586	1 1101 1010 0010	01 1101 1010 0010	10 0010 0101 1101	10 0010 0101 1110	11 1101 1010 0001

2. Add the numbers 56 + 178, and 1002 + 7586 using the binary representation. Verify that the binary result is equivalent to that found by computing the decimal summation.

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3. Express the decimal number -56, -178, -1002, and -7586 in binary form using the Unsigned, Signed-magnitude, One's-complement, Two's-complement, and Biased representations. Also note the number of bits (8 or 16) needed for the representations.

	Unsigned	Signed-Magnitude	Ones Complement	Twos Complement	Biased
-56	9 <u>—</u> 9	10111000 (8)	11000111 (8)	11001000 (8)	01000111 (8)
-178	2-2	2			
-1002	::				
-7586	n—1				

	Unsigned	Signed-Magnitude	Ones Compliment	Twos Compliment	Biased
-56		10111000(8)	01000111	01001000	01000111
-178		1 1011 0010(16)	0 0100 1101	0 0100 1110	1 0100 1101
-1002		1111 1110 1010(16)	0000 0001 0101	0000 0001 1011	1000 0001 0101
-7586		11 1101 1010 0010	00 0010 0101 1101	00 0010 0101 1110	10 0010 0101 1101

5. Subtract two numbers by using the following "trick": A-B is the same as A+(-B). This means that if we invert B (by using two's complement), we can just add the two numbers A and (-B).

	(	11110000)		(	)
56	56	00111000	178	178	•
-56	+(-56) +	11001000	-177	+(-177) +	
-56 0	0	100000000	1	1	
	(	)		(	)
7576	7576		1001	1001	
-7586	+(-7586) +		-1002	+(-1002) +	
-10	-10		-1	-1	

			(58)	1	장		1	1	1	1	1	1	1							
	Unsigned	Twos Compliment				178		1	0	1	1	0	0	1	0					
56	00111000 (8)	00111000(8)				-178 TC	1	0	1	0	0	1	1	1	0					
178	1011 0010 (8)	1 0100 1110				0	0	0	0	0	0	0	0	0	0					
1002	11 1110 1010	100 0001 0110																		
7586	1 1101 1010 0010	10 0010 0101 1110					1	1	1	1	1	1	1	1	1					
						1002		1	1	1	1	1	0	1	0	1	0			
						-1002 TC	1	0	0	0	0	0	1	0	1	1	0			
						0	0	0	0	0	0	0	0	0	0	0	0			
							1	1	1	1	1	1	1	1	1	1	1	1		
						7586		1	1	1	0	1	1	0	1	0	0	0	1	0
							4	_	_	_		^	^		^					_