

CAO HW3

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February 28, 2017

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The steps for multiplying -7 and 3 are found by closely following the algorithm as stated in §3.3, p. 187. First 7 is negated using two's complement. One of both of the signs is negative, hence the result must be negative. After using two's complement again on the end result after 4 iterations, the value 1110 1011 (-21) is found.

Iteration	Description	MR	MD	Product
0	Initial values	0011	1111 1001	0000 0000
	1. Convert to positive using 2s complement	0011	0000 0111	0000 0000
1	1. Prod = Prod + MD	0011	0000 0111	0000 0111
	2. SLL MD	0011	0000 1110	0000 0111
	3. SRL MR	0001	0000 1110	0000 0111
2	1. Prod = Prod + MD	0001	0000 1110	0001 0101
	2. SLL MD	0001	0001 1100	0001 0101
	3. SRL MR	0000	0001 1100	0001 0101
3	1. NOP	0000	0001 1100	0001 0101
	2. SLL MD	0000	0011 1000	0001 0101
	3. SRL MR	0000	0011 1000	0001 0101
4	1. NOP	0000	0001 1100	0001 0101
	2. SLL MD	0000	0111 0000	0001 0101
	3. SRL MR	0000	0111 0000	0001 0101
After	Convert to negative using 2s complement	0000	0111 0000	1110 1011