

This problem is an exercise to make sure you understand two's-complement addition.

x	y	$x + y$	$x +_5^t y$	Case
-12 [10100]	-15 [10001]	-27 [100101]	5 [00101]	1
-8 [11000]	-8 [11000]	-16 [110000]	-16 [10000]	2
-9 [10111]	8 [01000]	-1 [111111]	-1 [11111]	2
2 [00010]	5 [00101]	7 [000111]	7 [00111]	3
12 [01100]	4 [00100]	16 [010000]	-16 [10000]	4

Mode	x	y	$x \cdot y$	Truncated $x \cdot y$
Unsigned	4 [100]	5 [101]	20 [010100]	4 [100]
Two's complement	-4 [100]	-3 [101]	12 [001100]	-4 [100]
Unsigned	2 [010]	7 [111]	14 [001110]	6 [110]
Two's complement	2 [010]	-1 [111]	-2 [111110]	-2 [110]
Unsigned	6 [110]	6 [110]	36 [100100]	4 [100]
Two's complement	-2 [110]	-2 [110]	4 [000100]	-4 [100]