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Digital Logic HW

1. 0110 + 0011 = 1001 (6 + 3 = 9)

2. 1110 + 0111 = (1)0101 (−2 + 7 = 5)
result will be overflow. overflowed number will get ignored because it only can contains 4 bits.

3.

4. 0xBA = 10111010
0x7F = 01111111
10111010 (−70) + 01111111 (+127) = (1)00111001 (57)
= 0x39

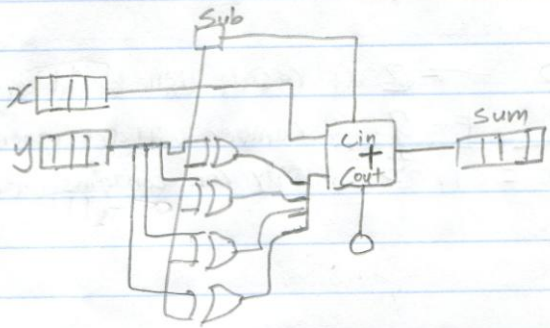
5. 1110 + 1001 = (1)0111 (−2 + 9 = 7)

6.

x	y	Cin	sum
x	y	Cin	If $(x+y+Cin) > 2^4-1$ then $x+y-2^5$
x	y	Cin	elseif $(x+y+Cin) < 2^4-1$ then $x+y+2^5$
			else $x+y$

7.

8.



10. it is using for extra one bit to two's complement Carry in.

11. It will save 8 gates

12. The borrow signal overflow when subtracting a large number from small number.