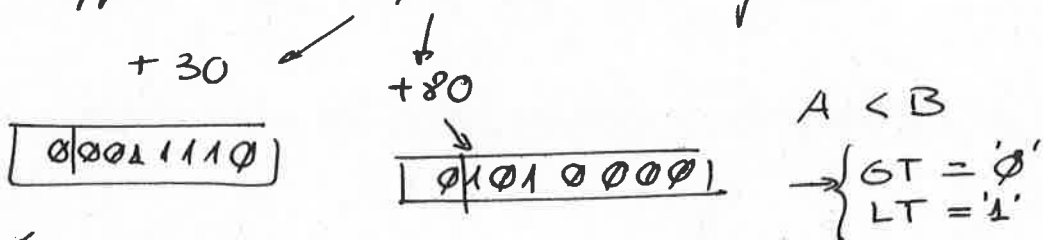


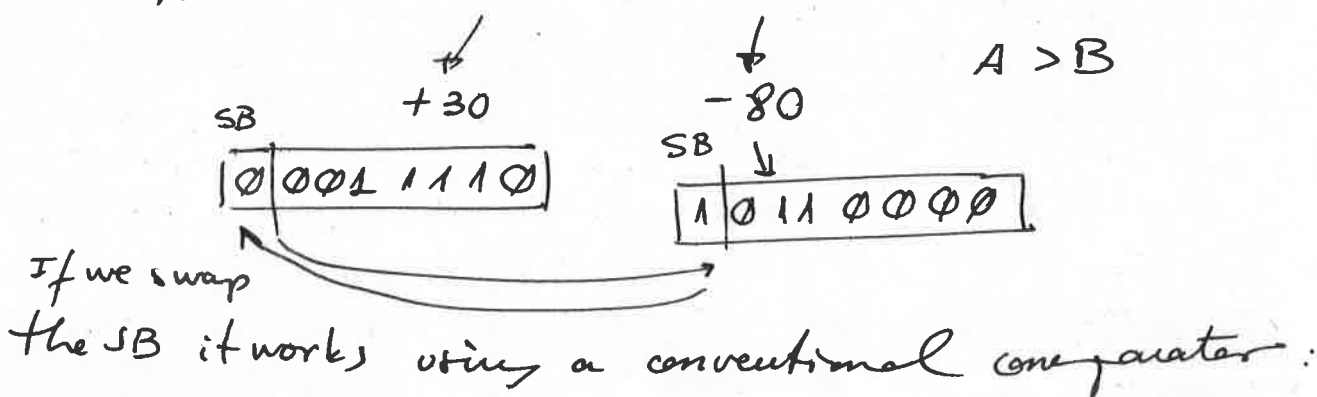
Some ideas on 2C numbers

Let's suppose that A, B are both positive

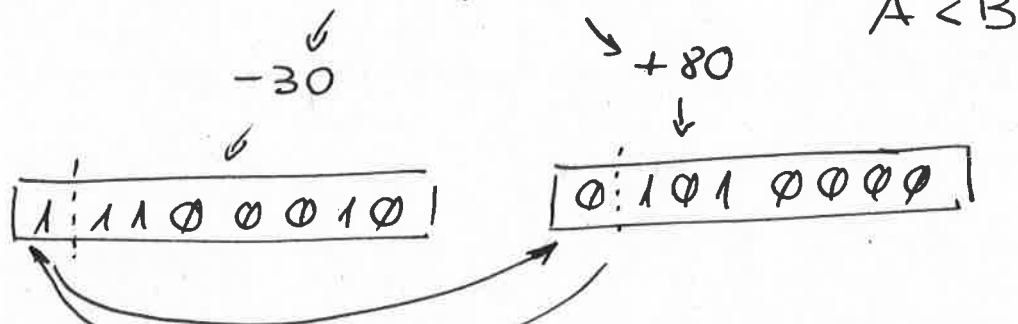


The comparison works as with a conventional unsigned comparator

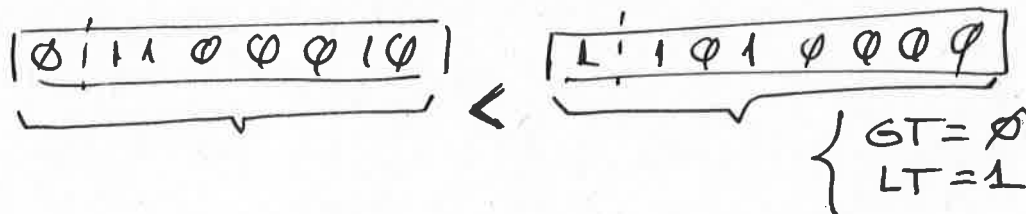
Let's suppose that A > 0, B < 0



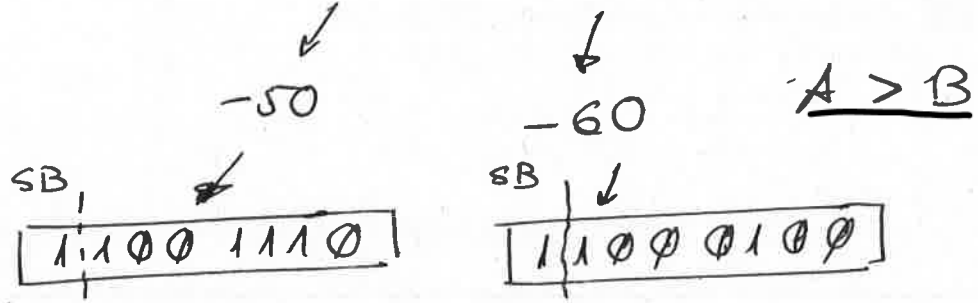
Let's suppose that A < 0, B > 0



If we swap the SB of the two operands, it works when working with a conventional unsigned number



Let's suppose that $A < 0$, $B < 0$



This case is equivalent to the one where both sign bit are positive $A > B$ and so, the Comp-8bit will work correctly

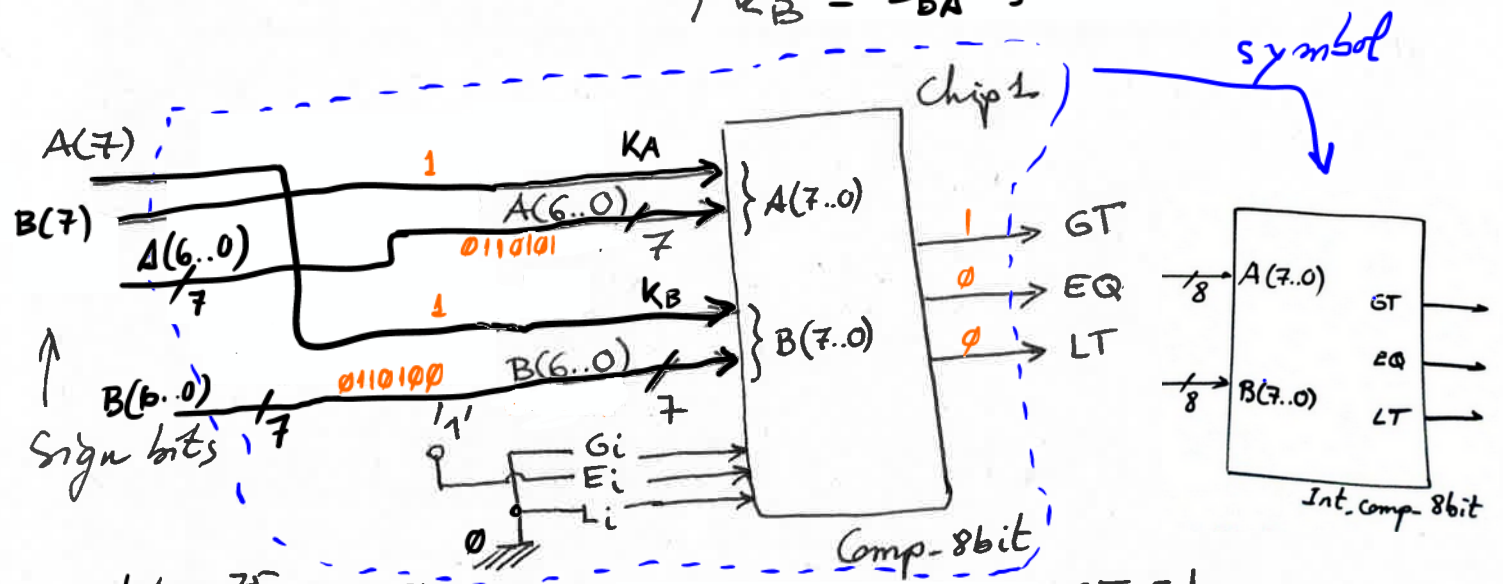
$(11001110)_2 > (11000100)_2$
 When applied to the Comp-8bit $\rightarrow A > B$ OK!

We can try more values and operations, so, in the end there is an algorithm respecting the SB.

SBA	SBB	K_A	K_B	
0	0	0	0	Do nothing with the SB
0	1	1	0	} swap the SB of the operands
1	0	0	1	
1	1	1	1	Do nothing with the SB

In this way, we can use a conventional Comp-8bit as follow:

$$\left. \begin{matrix} K_A = SBB \\ K_B = SBA \end{matrix} \right\} \text{swap}$$



For example
 $A = -75 \rightarrow 110110101$
 $B = -76 \rightarrow 110110100$

It generates the correct output

$GT = 1$
 $EQ = 0$
 $LT = 0$
 $A > B$