Compare Eq:

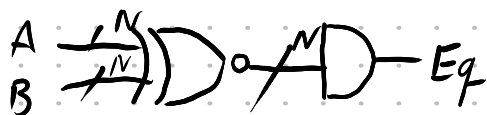$$A \xrightarrow{N} \quad B \xrightarrow{N} \quad \overline{)} \circ \quad \overline{)} - Eq$$

$$Eq = \&(\sim(A \wedge B))$$

Compare Lt:

overflow detection for subtraction

$\&$
- opposite signs for A an B $(A[N-1] \wedge B[N-1])$
- opposite signs for sum and A $(A[N-1] \wedge Sum[N-1])$

$V = (A[N-1] \wedge B[N-1]) \, \& \, (A[N-1] \wedge Sum[N-1])$

According to H&H, for 2 signed numbers

$L = V \wedge N$ $N = Sum[N-1],$ negative output