4-bit comparator X61860_en

Design a circuit that compares two 4-bit numbers represented in binary code and indicates whether the first is greater than, equal to or smaller than the second.

Specification

module *cmp4*(*a*, *b*, *eq*, *gt*, *lt*);
input [3:0] *a*, *b*;
output *eq*, *gt*, *lt* ;

Hint

Design a 1-bit comparator that receives the result of the comparison of the least-significant bits. Use four instances of this circuit.

Input

- *a* and *b* are the two 4-bit input numbers.

Output

- *eq* indicates that *a*=*b*.
- *gt* indicates that *a*>*b*.
- *lt* indicates that *a*<*b*.

Problem information

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Generation: 2026-07-14T06:42:57.771Z

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