
4-bit comparator**X75958_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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