Petya wants to hang a picture on the wall. To do this, he needs to drill a hole in the wall, drive a dowel into it and screw a screw into it. Petya rummaged in the pantry and found $n$ drilled and $m$ dowels. Petya wants to find a drill and a dowel of the same radius. However, such may not be, in this case, he wants to pick up a drill and a dowel so that the difference in their diameters is as small as possible. Help Petya.

The first line of the input contains integers $n$ and $m$ ($1 \leq n, m \leq 10^5$). The second line contains $n$ integers – the diameters are verified. The next line contains $m$ integers – dowel diameters. Diameters are set in non-decreasing order, all diameters are numbers from 1 to $10^9$.

Print the minimum possible difference in drill and dowel diameters

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**Sample input 1:**
3 2
1 8 15
5 6

**Sample output 1:**
2

**Sample input 2:**
3 3
1 3 5
3 4 6

**Sample output 2:**
0