Geometric Intersection

Preliminary

- Element Uniqueness

θ2-A-θ1

Junhui DENG

deng@tsinghua.edu.cn

❖ EU   Given a collection of n real numbers, are they distinct ?

   i.e., are there any duplicates ?

❖ There is a trivial algorithm to solve this problem by ...

❖ ... `sorting` all the numbers before doing a linear `scan`

❖ It's implied that EU can be solved in $\mathcal{O}(n\log n)$ time

❖ On the other hand, it has been proved that EU requires $\Omega(n\log n)$ time

D. P. Dobkin and R. J. Lipton

On the complexity of computations under varying sets of primitives

J. Computer and System Sciences, 18(1979), 86-91