2-2 The Efficiency of Algorithms[1]

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We show how to prove the correctness of two algorithms. One is an iterative algorithm called $\textsc{Equal}(S_1, S_2)$ for comparing two strings. The other is the classic recursive Euclid algorithm for computing the greatest common divisor (gcd) of two natural numbers.

The Convex Polygon Diameter Problem

Solution

Theorem 1 *For a convex polygon, a pair of vertices determine the diameter.*

Proof

Definition 1 (Line of Support)

Definition 2 (Antipodal)

Fact 1 *Not all vertex pairs are antipodal.*

Proof

Theorem 2 (Yaglom) *The diameter of a convex polygon is the greatest distance between parallel lines of support.*

Proof

Problem 6.13: Lower Bound for Comparison-based Sorting

Solution

Comments

References