Quiz 4 Information

Math 282 Computational Geometry

The next quiz will be Wednesday, January 25. To prepare for this quiz, you should study the material in Sections 4.1–4.4, 5.1, 5.2, and 5.7 of the text. Focus on the *definitions*, *examples*, *theorems*, and *algorithms* in the text.

In particular, you should be able to do the following:

1. Be able to state precise definitions of the following terms and give examples of them:

- Voronoi diagram, Voronoi region, Voronoi edges, Voronoi vertices
- Medial axis, straight skeleton
- Curve reconstruction, correct polygon reconstruction

2. Be able to give precise answers to the following questions:

- How does the *incremental algorithm* construct a Voronoi diagram from a point set?
- What is does it mean that the Delaunay triangulation is the *dual graph* of the Voronoi diagram?
- How are Delaunay triangulations related to 3D convex hulls (in Section 4.4)?
- How does the medial axis algorithm work (in Section 5.1)?
- How does the medial axis differ from the straight skeleton of a polygon?
- How does the CRUST algorithm work?
- In what sense is the CRUST algorithm "provably correct"?