# Quiz 3 Information

MATH 261 Computational Geometry

The next quiz will be Tuesday, January 21. To prepare for this quiz, you should study the material in Sections 3.1, 3.2, 3.4, 3.5, and 4.1 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:

- triangulation of a planar point set
- edge flip, flip graph
- lexicographical order, legal edge
- Delaunay triangulation, minimum weight (or length) triangulation, greedy triangulation
- Voronoi diagram, Voronoi region, Voronoi edges, Voronoi vertices

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

- How does the *triangle splitting algorithm* produce a triangulation of a point set?
- How does the *incremental algorithm* produce a triangulation of a point set?
- What is *Euler's Formula* for a connected planar graph?
- Given a planar point set $S$, is the flip graph of $S$ connected? How is this shown?
- What is the *empty circle property* of a Delaunay triangulation?
- Is the Delaunay triangulation the triangulation with the smallest total edge length?
- How is a Voronoi diagram determined by a collection of sites?
- What are some key properties of Voronoi regions, edges, and vertices?