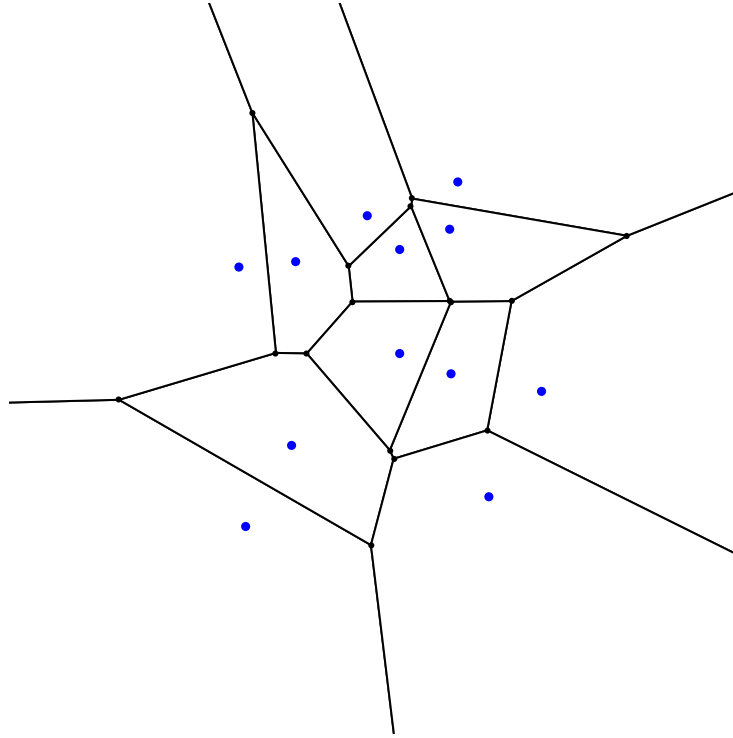


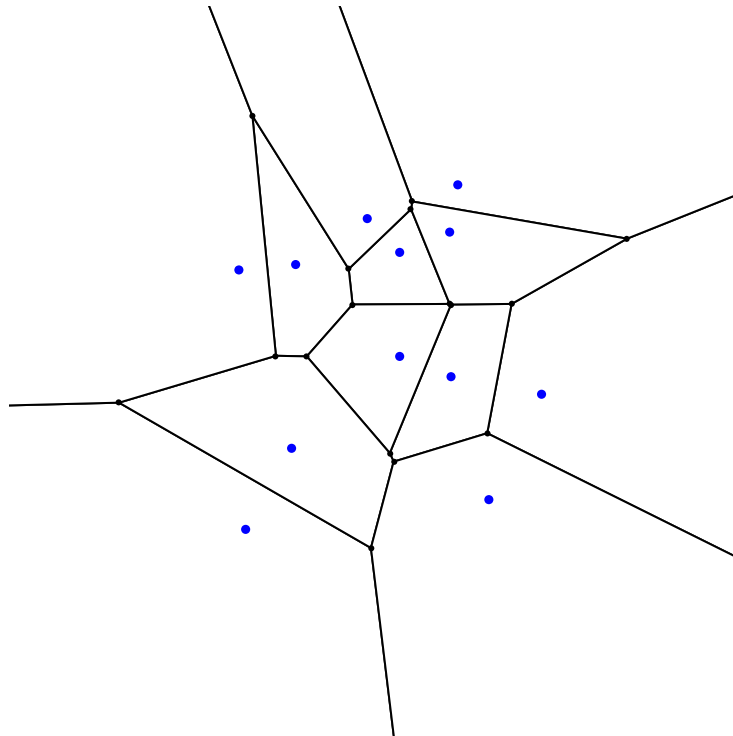
Voronoi Diagrams

Math 282 Computational Geometry

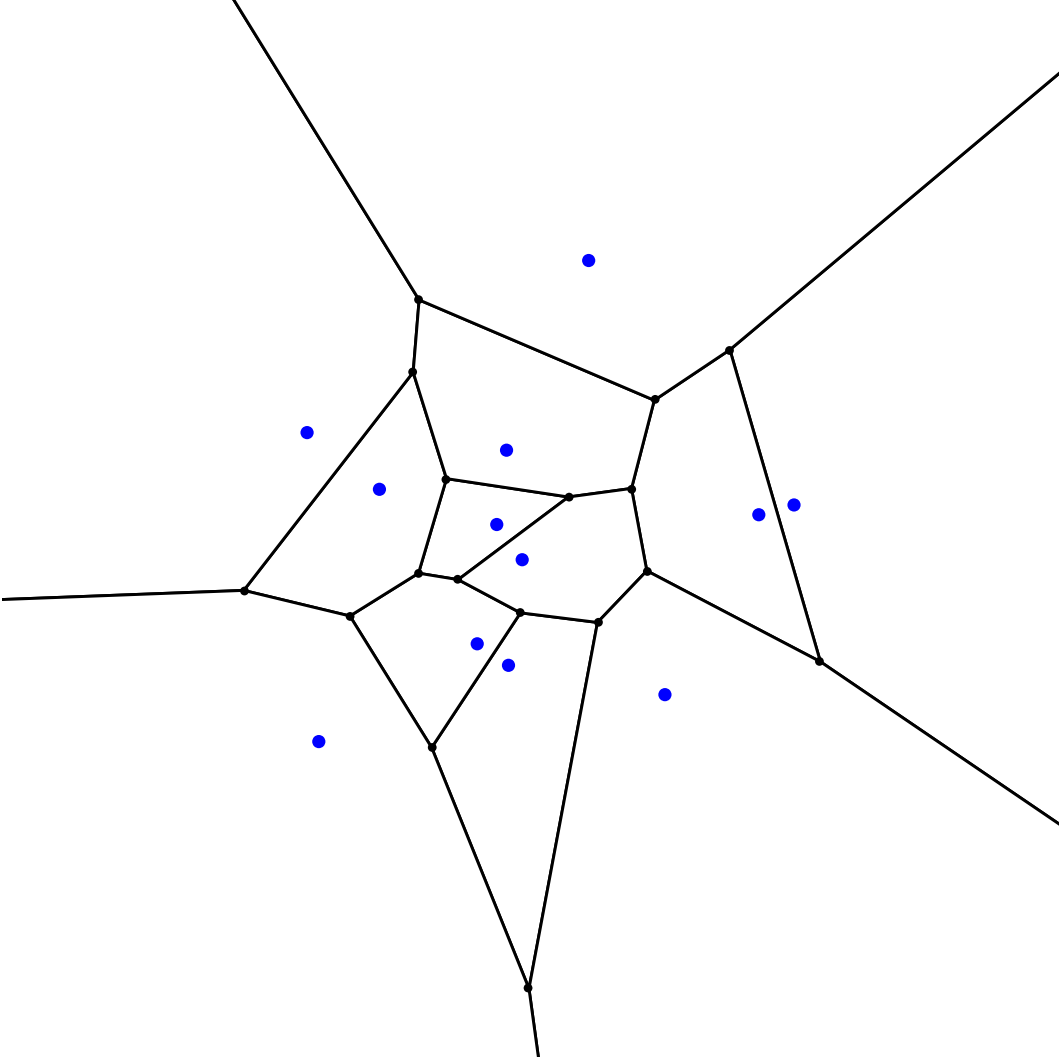
Draw the dual graph of the following Voronoi diagram.



Now draw the dual graph again, with straight-line edges.



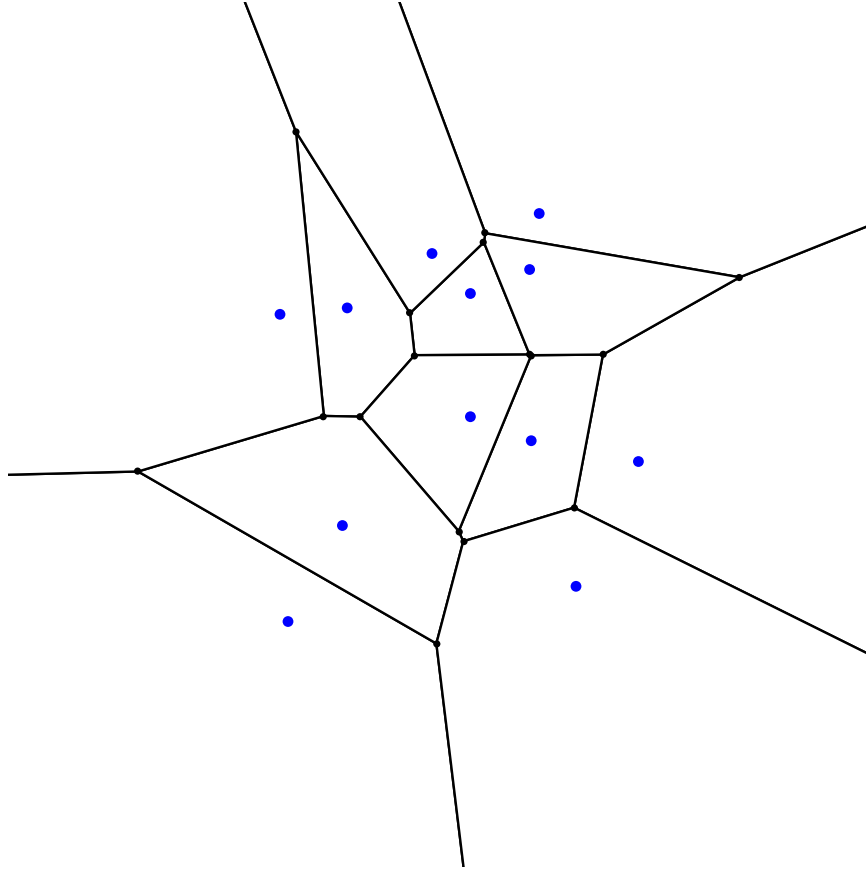
Draw the straight-line dual graph of the following Voronoi diagram.



Voronoi Algorithms

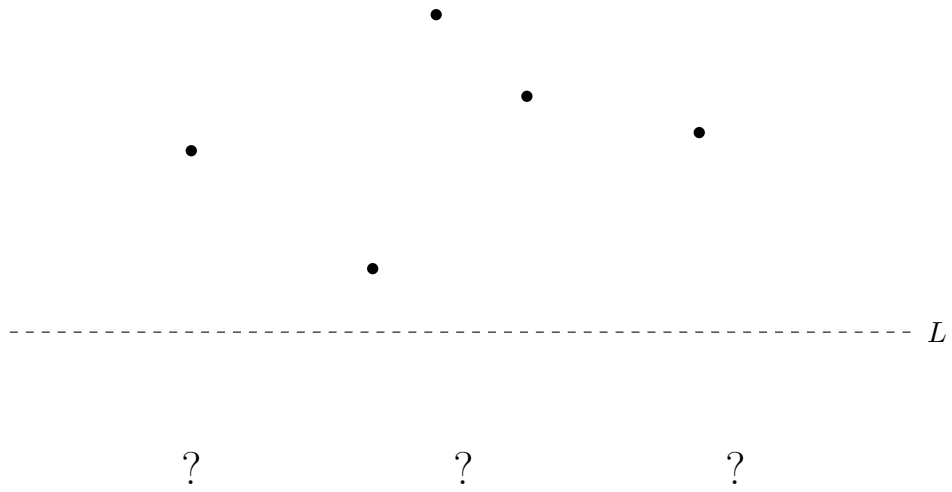
Math 282 Computational Geometry

Suppose we have an existing Voronoi diagram, constructed from a set of sites $\{p_1, p_2, \dots, p_k\}$. We want to add new site p , and to update the diagram to include the region $\text{Vor}(p)$.



1. How does the diagram change when site p is added?
2. Describe an algorithm for updating the Voronoi diagram to include the new site.
3. What point location and line intersection operations does your algorithm require?
4. What is the computational complexity of your algorithm?

Suppose you have only partial knowledge of the sites from which a Voronoi diagram is to be constructed. Specifically, you can see only those sites to above a given horizontal line L , as shown here:



How much of the Voronoi diagram can you determine from this information?