

# Homework 5

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Math 282 Computational Geometry  
due 5:00pm on Tuesday, March 23

Solve the following problems from the textbook, and write your solutions clearly and neatly. Make sure to explain your reasoning and provide mathematical details that support your answers. For a few tips on writing solutions, see [this helpful guide for mathematical writing](#).

You may write or type your solutions electronically, or write them on paper and scan/photograph them. If you photograph your papers, please use a scanning app to produce a single PDF file containing your solutions. Upload your written solutions to the [Homework 5](#) assignment on Moodle.

1. Exercise 3.2
2. Exercise 3.3
3. Exercise 3.7 — In other words, depending on how you choose to triangulate the convex hull and how you choose to split triangles, can the triangle-splitting algorithm achieve all possible triangulations of a point set?
4. Exercise 3.10
5. Exercise 3.11 — Say how you would modify the Graham scan algorithm so that it returns a triangulation instead of a convex hull.
6. Exercises 3.14 — The *degree* of a vertex  $v$  is the number of edges incident to  $v$ .
7. Exercise 3.19