This assignment is in two parts. The first part is due at the start of class on Day 14. It will not be collected, but you are expected to complete these exercises, just to practice basic skills. If you feel that you need more practice, then do more problems or talk to me.

  14.8 Exercises 7, 13, 14, 27.

The second part is due on paper at the start of class on Day 16. Submit polished solutions, including all necessary work and no unnecessary work, in the order assigned.

  A. 14.8 Exercises 46 and 47.

  B. 14.8 Exercise 51. (This is the mini-version of Exercise 52. Exercise 52 explains why this example is important. But I am not requiring you to solve Exercise 52.)

  C. Use Lagrange multipliers to prove that, among all triangles with given perimeter P, the one with largest area is equilateral. You may find Heron's formula for the area A useful:

$$A = \sqrt{s(s-x)(s-y)(s-z)},$$

where x, y, and z are the lengths of the triangle's sides and $s = (x+y+z)/2$ is the semi-perimeter.