Quiz 6 Around the Isoperimetric Inequality, February 24, 2015. You have 25 minutes to solve the problem below. Please write on both sides of the page.

Good Luck!

Problem (the two parts are of equal value).

- Of all the parallelograms of area 1, which one has the least perimeter?
- Of all the parallelepipeds of volume 1, which has the smallest surface area?

Extra Problem (no credit). If you are bored, think about the following; we will talk about it in class later: Let an angle $\alpha$ be given, and consider triangles $ABC$ with internal angle $\alpha$ near $A$ and side lengths $AB = c$, $AC = b$, and $BC = c$. Of all such triangles with a fixed value for $a - (b + c)$, which one has the least area?

- Solve the problem.
- Why am I asking it?