Math 302, Section B1
Challenge Problem no. 4

Prove that in Euclidean geometry any two rectangles of the same area are equivalent.

You may assume the standard facts regarding Euclidean geometry as known (e.g. formulas for the areas of rectangles, triangles, parallelograms etc).

Hint: It is enough to show that a rectangle is equivalent to the square of the same area. Moreover, when proving equivalence it suffices to cut both figures into the same collection of polygons (not necessarily triangles)