MATH 402 Worksheet 10

Friday 4/27/18

Review problems
In many constructions, we took a triangle ABC, took the midpoints D, E of the sides AB and AC respectively. We then dropped the perpendiculars from A, B, C to the line DE to obtain points G, F, H respectively.

Exercise 1. Verify that $FHBC$ is a Saccheri quadrilateral with base FH.

Exercise 2. Show that the triangle ABC and the Saccheri quadrilateral $FHBC$ are equivalent. Keep in mind there are a couple of cases to check. Conclude that the triangle and the Saccheri quadrilateral have the same area.

You will use this construction in the following exercises.

Exercise 3. Show that if two triangles ABC and DEF have congruent sides and the same defect, then they are equivalent.

Exercise 4. Show that any two triangles which have the same defect are equivalent, and so have the same area.