

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.

Exercise 3. Show that if $ABCD$ and $A'B'C'D'$ are two Saccheri quadrilaterals with the right angles at A, B, A', B' which have the property that the top angles are congruent and $CD \cong C'D'$, then the Saccheri quadrilaterals are congruent. In particular, show that $AB \cong A'B', AC \cong A'C'$ and $BD \cong B'D'$.