The Congruence of a Rectangle

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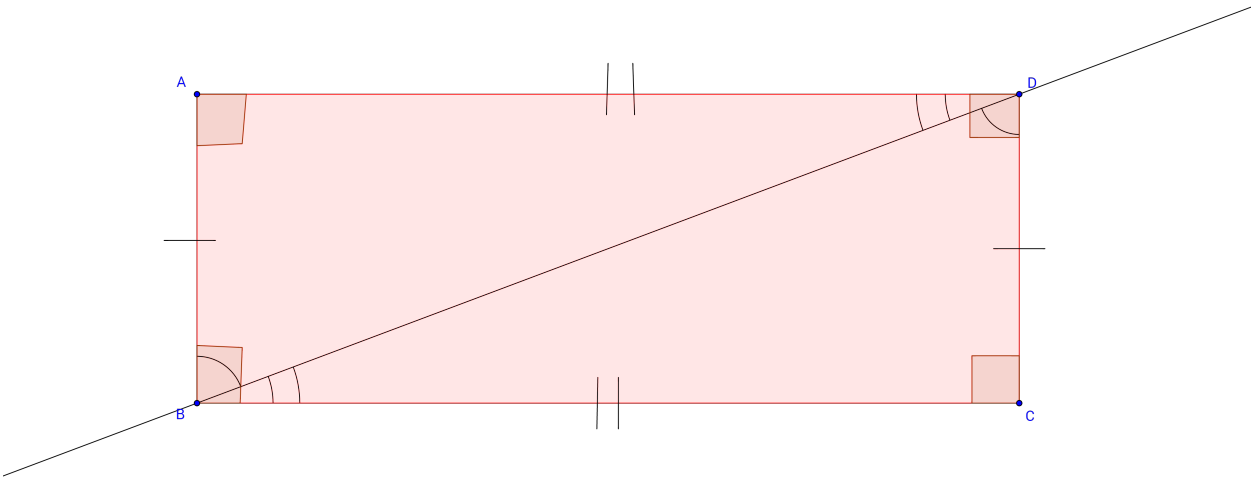
April 29, 2015

Theorem 3.2. Let ABCD be a rectangle. Then, each par of opposite sides of ABCD is a pair of congruent segments.

Proof. Let ABCD be a rectangle. By Gebels Theorem 3.1 we know that ABCD is also a parallelogram. Suppose the line BD crosses through parallel sides AB and CD. By Euclid I.29, we know that angles ABD and CDB are congruent and angles ADB and CBD are congruent. Since these sets of angles are congruent and the triangles ABD and CDB share side CD, the triangles are also congruent by Euclid I.26. Since the triangles ABD and CDB are congruent, then sides AB and DC must be congruent and sides AD and BC are congruent. Therefore, the opposite sides of ABCD are pairs of congruent segments.



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