Special Parallelograms Lab II – Rectangles

1. Open GSP.
2. Create a horizontal line segment AB.
3. Click on point 'A', point 'B', and the line segment AB.
4. Go to <Construct><Perpendicular Lines>
5. Create a point 'C' on the perpendicular line a few inches up from point 'B'.
6. While point 'C' and perpendicular line BC are highlighted go to <Construct><Perpendicular Line>
7. At the intersection point of the two perpendicular lines create point D.
8. Since the only real line segment you have in your diagram is line segment AB, use your straight-edge tool to create line segments BC, CD & DA.
9. Click the perpendicular lines you created _at a point outside the rectangle you just created_. Then go to <display><hide perpendicular lines>.

You should now have a rectangle that looks something like this:

10. Measure the four angles to make sure that each is 90 degrees. Move point 'A' around a bit to make sure the angles remain 90 degrees.
11. Draw diagonals DB and AC and create point 'E' at the intersection point.

Your figure should now look something like this:
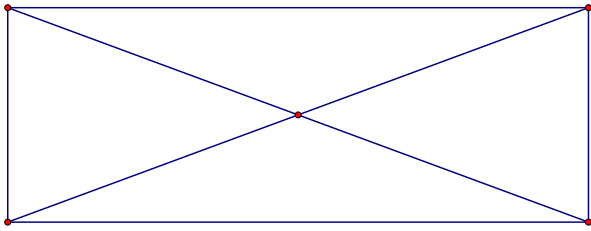
12. Measure the lengths of each diagonal (the diagonals being segments AC & DB) by clicking on the endpoints and going to <measure><distance>. What do you notice about the lengths of the diagonals?
13. Move point 'A' around a bit on your screen. What do you notice about the lengths of the diagonals?
14. Verify that the rectangle is still a parallelogram using any method you'd like.
15. Copy the following properties in you notebook.

Properties of a Rectangle

- A rectangle inherits all the properties of a _____
- A rectangle has four angles that are each_____ degrees.
- The diagonals of a rectangle are _____.