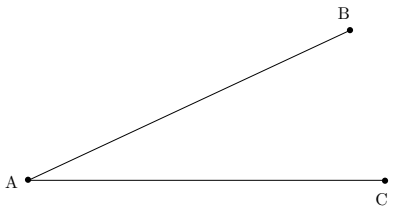
Math 191 Fundamentals of Mathematics II
Section 10.5: Quadrilaterals and Triangles
January 31, 2014

Constructing Triangles and Quadrilaterals

First we'll construct some triangles and quadrilaterals using a compass and straightedge.

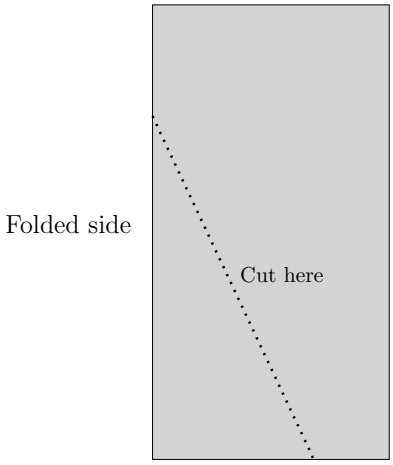
1. Use a compass and straightedge to draw an equilateral triangle. Explain why your triangle must be equilateral without measuring. Use the definition of a circle.

2. In the figure below, line segments AB and AC have the same length. Use a compass and straightedge to draw a rhombus with AB and AC as two of its sides. Explain why your construction must give a rhombus.



Next, we'll construct some triangles and quadrilaterals by folding and cutting paper.

3. To create an isosceles triangle, fold your paper in half, then cut (or just fold) a line segment from the crease to one of the adjacent sides, as shown in the figure. When you unfold the page, why is the triangle isosceles?



4. Can you think of a way to use a rectangular piece of paper to create a (not rectangular) parallelogram by cutting? Describe your method and explain why it will give a parallelogram.