A Human Introduction to Geometry
Homework 1

Spring 2017
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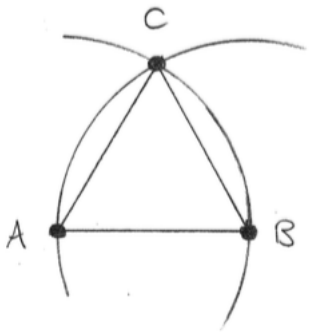
Constructing Regular Polygons.

On this homework you will investigate how to construct regular polygons using only a straightedge and compass. To get you started, here is the construction for an equilateral triangle, which appears in Euclid Proposition I.1:

Draw two points in the plane (this is how every Euclidean construction starts), called A and B. Use the compass to draw the circle of radius AB around center A and the circle of radius AB around center B. Let C be one point of intersection of the two circles and use the straightedge to draw the triangle ABC:



We will discuss in class exactly **why** this triangle is equilateral.

Your assignment:

Use straightedge and compass to draw regular n-gons for $n = 4$, $n = 6$ and $n = 8$. There should be three separate pictures. You **do not** need to explain the reasoning behind the construction, but you **do** need to leave the construction lines in the picture (i.e., don't erase them) so I can verify if your construction is correct.

Bonus problem:

Use straightedge and compass to draw a regular pentagon.