HW 2. DUE *most likely* on Oct 7. In class!

2.1. Using a straight edge and ruler:

a. *Draw* a triangle in general position. Please also state in your own words what "general position" means here.

b. *Draw* the perpindicular bisectors to each edge of your triangle, using the method(s) of HW 1.

ALERT: When I say "draw", as opposed to "construct" this means you only need to draw the picture with ruler and compass. Unlike "construct", when I ask you to "draw" there is nothing to prove. Nor do you need to describe steps taken. You are just drawing careful pictures with your compass and straightedge.

c. *Prove* that the three lines you just drew intersect in a single point. (Hint: Use some of HW 1)

2.2. Given a triangle, *construct* the circle which circumsribes it. Begin by stating what it means for a circle to circumscribe a triangle.

2.3. Using a straight edge and ruler:

a. *Draw* a triangle in general position.

b. *Draw* the angle bisectors to each angle of your triangle, by using the method of HW 1.

As per ALERT above, the instruction 'draw" means there's nothing to prove...

c. **Prove** that the three lines you just drew intersect in a single point.

(Hint: Use some of HW 1)

2.4. Given a triangle, *construct* its inscribed circle. Begin by stating what it means to have a circle inscribed in a triangle.

HINT: You will want to use the construction of "dropping a perpindicular" from HW 1.

2.5 *Given a circle with center* 0*: construct a 15-90-75 triangle, where the numbers refer to degrees fo angles)*

EXTRA *Construct the circle inscribed within your triangle.*