Math 1166: Homework 4
Due: Tuesday, February 5th

1) Given any triangle, explain why the angle bisectors will always meet at a single point.

2) Construct a triangle given one angle $\theta$, and the lengths of the altitudes to the two other angles, $a$ and $b$ below. Describe the steps in your construction and explain why the construction works.
3) You are on a boat at night. You can see three lighthouses, and you know their position on a map. Also you know the angles of the light rays from the lighthouses. How do you figure out where you are? Explain your work.