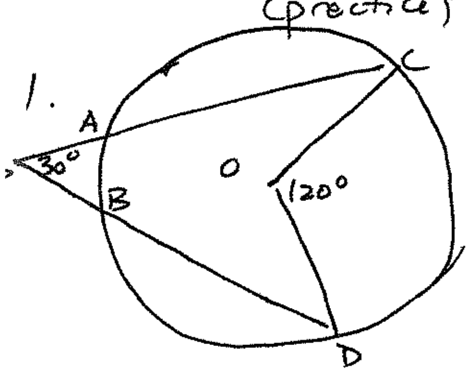
Math 531 Exam 1. (Version 2) (practice)

O is always the center of a circle.
Hand in six solutions.

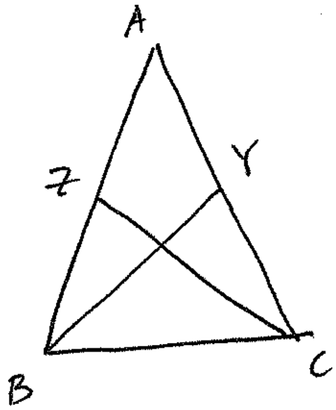
1.



Find $\widehat{AB}$.

2. A regular hexagon is inscribed in a unit circle. Find its perimeter.

3.



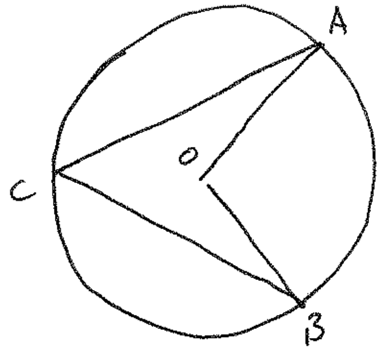
Assume $\triangle ABC$ is isosceles with base BC, and that CZ and BY are altitudes.

Prove $BY = ZC$.

4. In quadlirateral $ABCD$ suppose that $AB = CD$ and $AB \parallel CD$. Prove $ABCD$ is a parallelogram.

5. Let P be a point exterior to a circle centered at point O, and draw the two tangents to the circle from P. Let S and T be the two points of tangency. Show that OP bisects $\angle SPT$ and $PS = PT$.

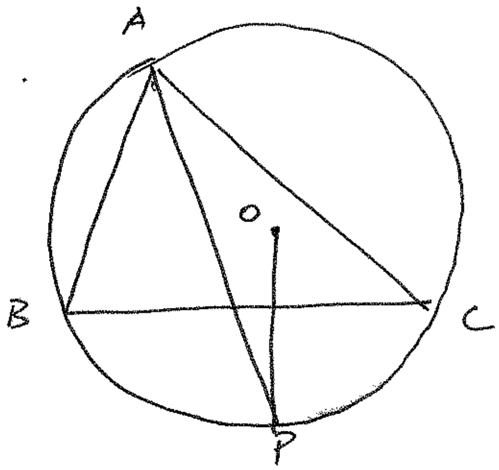
6.



Prove (as proved in class) that $\angle AOB = 2\angle ACB$.

(Here O is the center)

7.



O is the center, and $\overline{AP}$ is the angle bisector of $\angle BAC$.
Prove that $OP \perp BC$.