

# MATH 476 – College Geometry

## Homework Assignment 4 and Proofs

**Homework:**

Not due

1. **Section 3.8:** 1, 4

**Proofs:**

**Due Friday, October 6** (5 proofs)

- The interior of a circle is a convex set.
- Let  $\widehat{ABC}$  be an arc of circle  $O$ .
  - Prove that if  $\widehat{ABC}$  is a minor arc, then  $O$  and  $B$  are on opposite sides of  $\overleftrightarrow{AC}$ .
  - Prove that if  $\widehat{ABC}$  is a major arc, then  $O$  and  $B$  are the same side of  $\overleftrightarrow{AC}$ .
- Prove that a line passing through the center of a circle that is perpendicular to a chord bisects that chord.
- Let  $P$  be external to  $\odot O$ . If  $\overline{PA}$  and  $\overline{PB}$  are tangents to  $\odot O$  at  $A$  and  $B$  respectively, then  $\overline{PA} \cong \overline{PB}$ .