

**MT 453 Elements Day 25**

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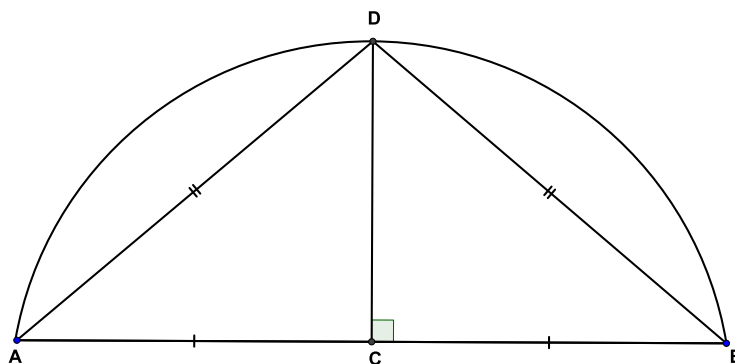
**Proposition III.30**

*To bisect a given circumference.*

Let  $ADB$  be the given circumference which is to be bisected.

Let  $C$  be the midpoint of  $AB$  and suppose  $DC$  is perpendicular to  $AB$ .

Draw  $AD$  and  $DB$ .



Then  $AC = CB$  and  $CD$  is common and  $\angle DCA = \angle DCB = \perp$ .

Therefore, we have  $AD = DB$ . [I.4]

Then the arcs  $AD$  and  $DB$  are equal, [III.28]

so the arc  $ADB$  has been bisected.

Q.E.F.