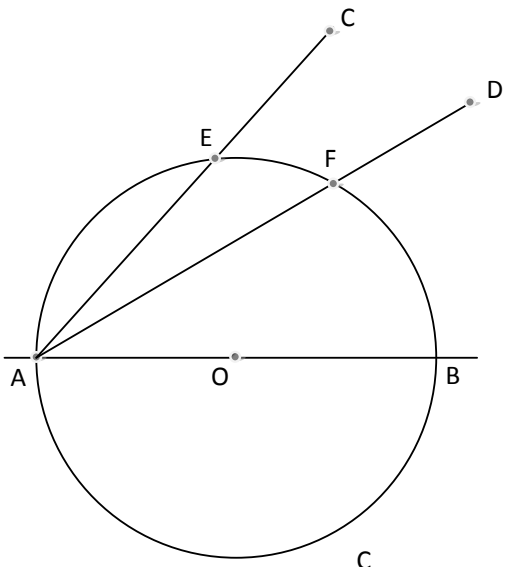
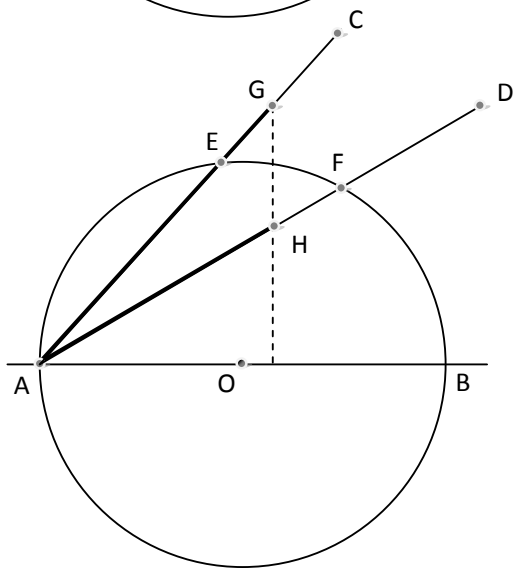
PRIZE MONEY FOR BEST PROOF



This math problem is deceptively simply to understand and fiendishly tricky to prove.

1. Start with circle O and diameter AB.
2. Draw two arbitrary secants from A. In this case, AC and AD, producing chords AE and AF respectively.
3. Place point G on secant AC so that length AG = AF. Also place point H on secant AD so that length AH = AE.
4. Draw a line through points G and H and extend it to diameter AB.



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Why is segment GH always perpendicular to diameter AB?

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PRIZE $$$ --- Jurik Research will award $100 to anyone who provides the most elegant proof. Proof is limited to using geometry, trigonometry, calculus, linear algebra, or any combination thereof.

PRIZE $$$ --- Jurik Research will also award $200 to anyone who provides the most interesting suggestion as to how this geometric phenomenon can be applied to signal processing. Although not necessary, you may include software code (in MATLAB only) to demonstrate your ideas.

* Entries must not be copyrighted material. The staff of Jurik Research will post on their website their choice of winning entry and two "honorable mentions" of each contest, along with each author's name and country of origin. Prize $$$ is awarded only for the winning entries. All decisions are final. **By submitting your entry, you agree to these conditions.**

Send your contest entry to … Jurik Research Contest, Suite 237
686 South Arroyo Parkway
Pasadena, CA 91105

Please include your name and email address. This competition begins 1-JAN-2010 and ends 1-MAY-2010. Results will be announced by 1-JUN-2010.