

Email your solution to  
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99.99 AED

Imagine that you found yourself in a desert, no TV, no Mobile, no ..... you saw a perfect circle that was drawn on sand (let us say flat-sand). You only have a piece of wood (let say UNMARKED RULER). assume that the length of the unmarked ruler is  $X$ . Using the unmarked ruler you were able to measure  $AB$  and you discovered that  $2X < |AB| < 3X$  (Note  $|AB| = |CB| = |BD|$ ). Imagine that your mathematical-knowledge does not exceed a 12th-grade student. Some how you were able to construct a rectangle  $HEFG$  inside the upper-half of the circle such that  $|HE| = (5/8)|EF|$

Question:  
 State clearly the steps that you used in order to construct such rectangle. Assume that you can draw perpendicular line-segments to the line-segment  $AB$  just by using your finger + the unmarked ruler

Comment: This is not a hard problem at all (I guess). However, you need to use a very beautiful Mathematical concept that we all are familiar with !!!

:))))))))) As usual: Calculators, Try and Error, and Computer programs are NOT ACCEPTED. You need to give me a correct mathematical argument that clarify your solution

