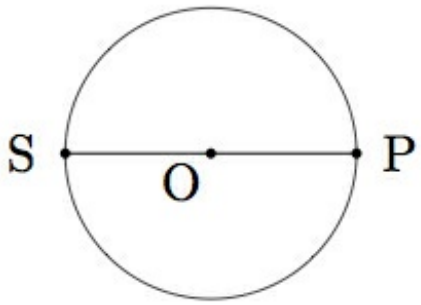
G-CO Inscribing a hexagon in a circle

Task

Let C be a circle with center O and a diameter meeting C in points P and S as shown below:



a. With straightedge and compass, show how to find a point Q on C so that triangle OPQ is equilateral.

b. Repeating part (a) show how to find points R, T, U on C so that $PQRSTU$ is a regular hexagon.

c. Find the area of $PQRSTU$. How does it compare to the area of C?

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