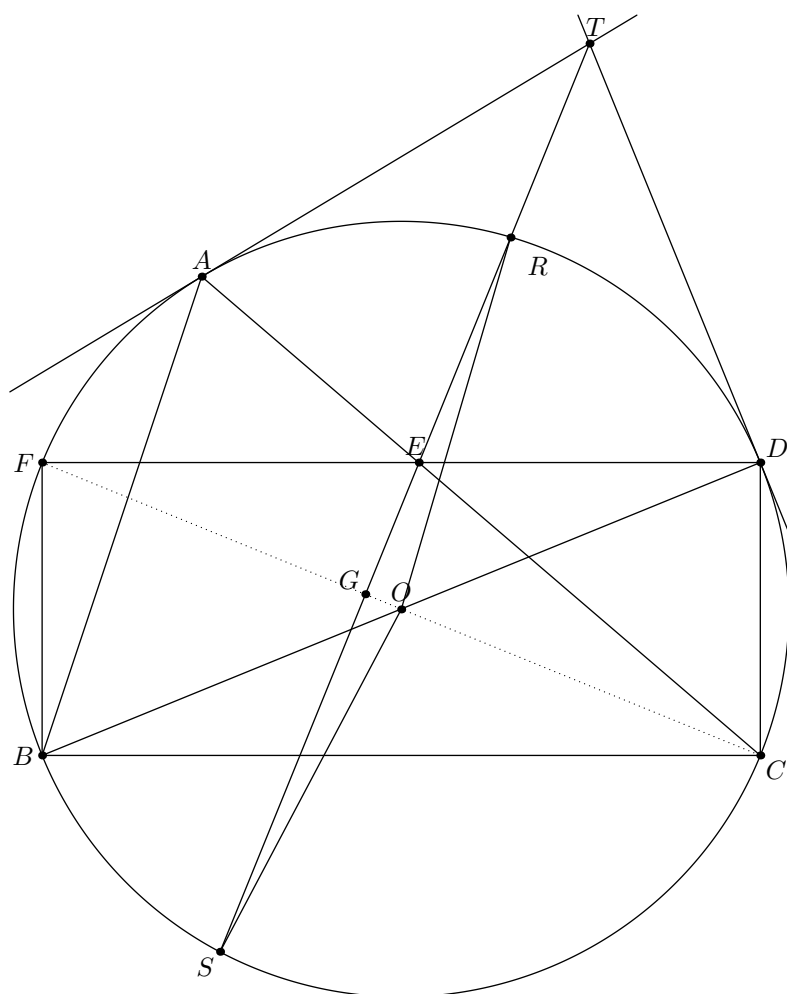


# 2020 Centroamerican Shortlist G2

LIN LIU

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Let  $G = \overline{OC} \cap \overline{TS}$ .

**Claim:**  $F, G, O, C$  are collinear.

*Proof.* Notice the rectangle  $FBCD$ . Because  $O$  is the intersection of the diagonals of the rectangle, we have that  $F$  lies on  $OC$ .  $\square$

$$\angle SGO = \angle RGO \implies \angle FOS = \angle FOR.$$

Use diagram 1 for reference.

$$\angle OGS = \angle OGR = 90^\circ \implies \triangle GOS \cong \triangle GOR \implies \angle GOS = \angle GOR.$$