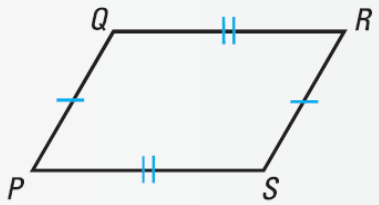
Problem 1. Prove Larson Theorem 6.2.

THEOREM 6.2

If a quadrilateral is a parallelogram, then its **opposite sides** are congruent.

$\overline{PQ} \cong \overline{RS}$ and $\overline{SP} \cong \overline{QR}$



Given: $\overline{PQ} \| \overline{RS}$ and $\overline{PS} \| \overline{QR}$

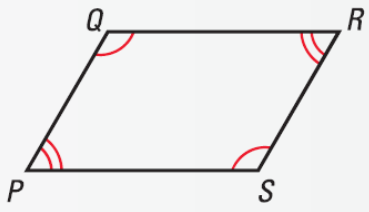
Show: $\overline{PQ} \cong \overline{RS}$ and $\overline{PS} \cong \overline{QR}$

Problem 2. Prove Larson Theorem 6.3.

THEOREM 6.3

If a quadrilateral is a parallelogram, then its **opposite angles** are congruent.

$\angle P \cong \angle R$ and $\angle Q \cong \angle S$



Given: $\overline{PQ} \| \overline{RS}$ and $\overline{PS} \| \overline{QR}$

Show: $\angle PQR \cong \angle RSP$ and $\angle QPS \cong \angle SRQ$

Problem 3. Let $A = (1, 5)$, $B = (7, 3)$, and $C = (9, 7)$. Find a point D such that quadrilateral $ABCD$ is a parallelogram.