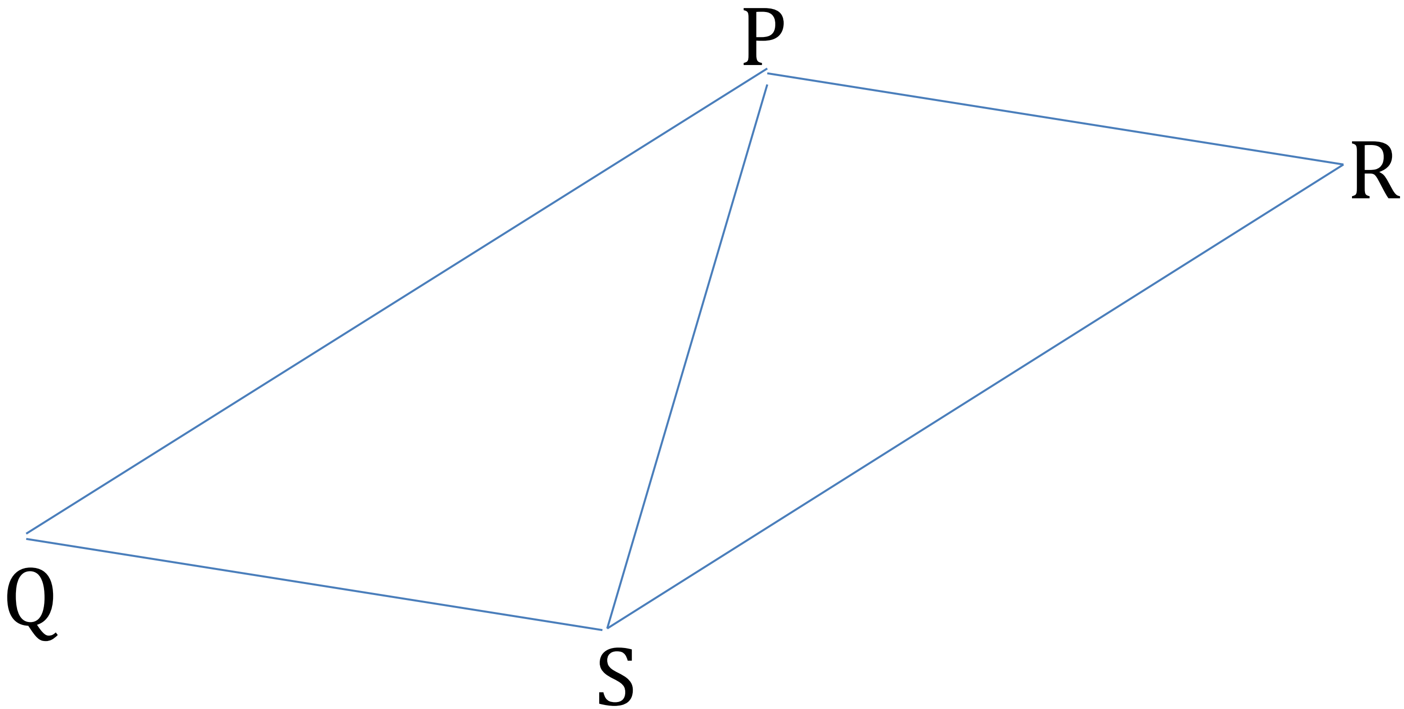
Using Congruent Triangles: CPCTC

With SSS, SAS, ASA, and AAS, we know how to use three parts of triangles to show that triangles are congruent. Once we have congruent triangles, we can make conclusions about their parts because by definition corresponding parts of congruent triangles are congruent. This is abbreviated as CPCTC

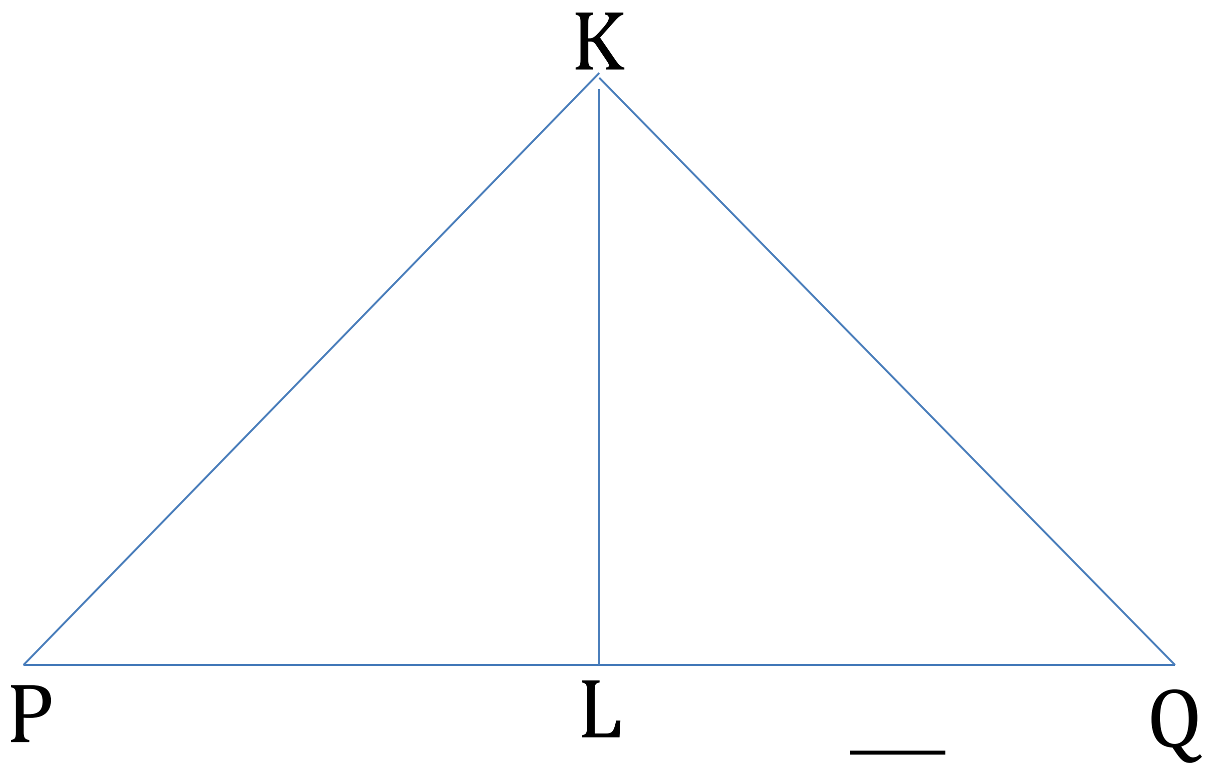
We can use congruent triangles and CPCTC to measure distances, such as the distance across a river and similar problems indirectly.

Given: $\angle QPS \cong \angle RSP, \angle Q \cong \angle R$



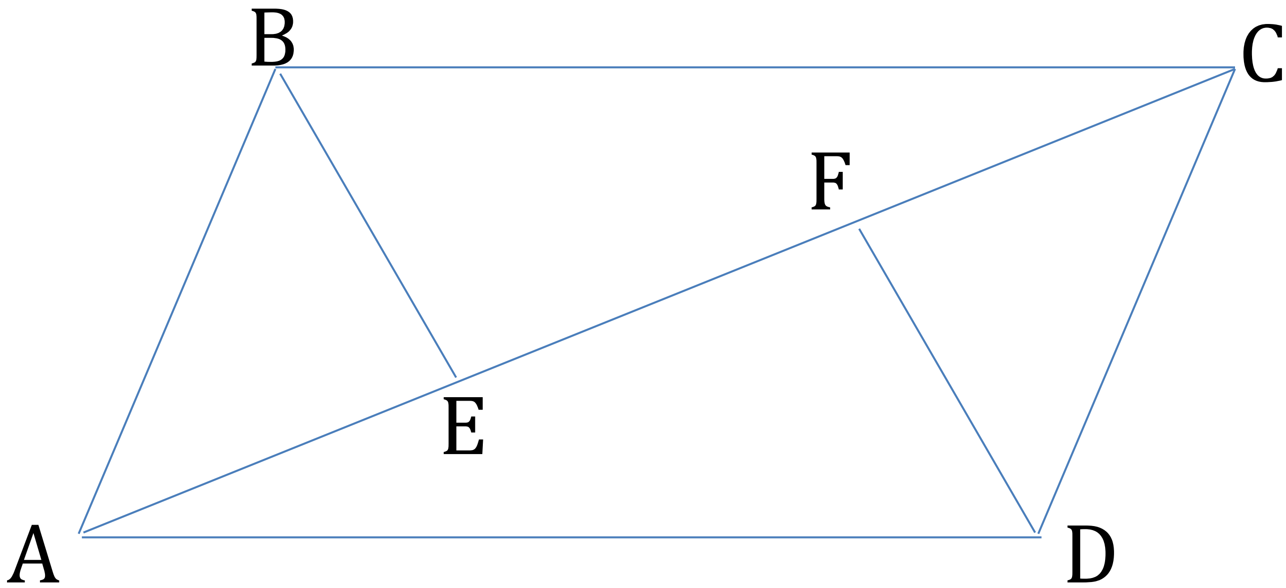
Prove: $\overline{PQ} \cong \overline{SR}$

Given: $\overline{PK} \cong \overline{QK}$, $\overline{KL}$ bisects $\angle PKQ$



Prove: **L** is the midpoint of $\overline{PQ}$

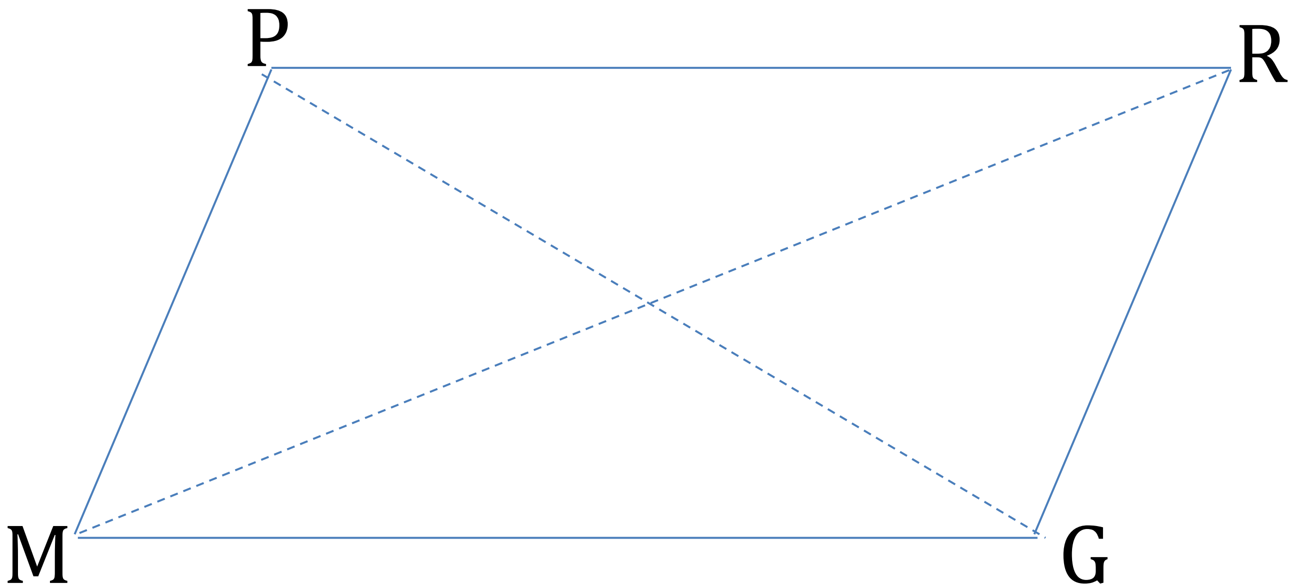
Given: $\overline{BE} \perp \overline{AC}, \overline{DF} \perp \overline{AC}, \overline{BE} \cong \overline{DF}, \overline{AF} \cong \overline{EC}$



Prove: $\overline{AB} \cong \overline{DC}$

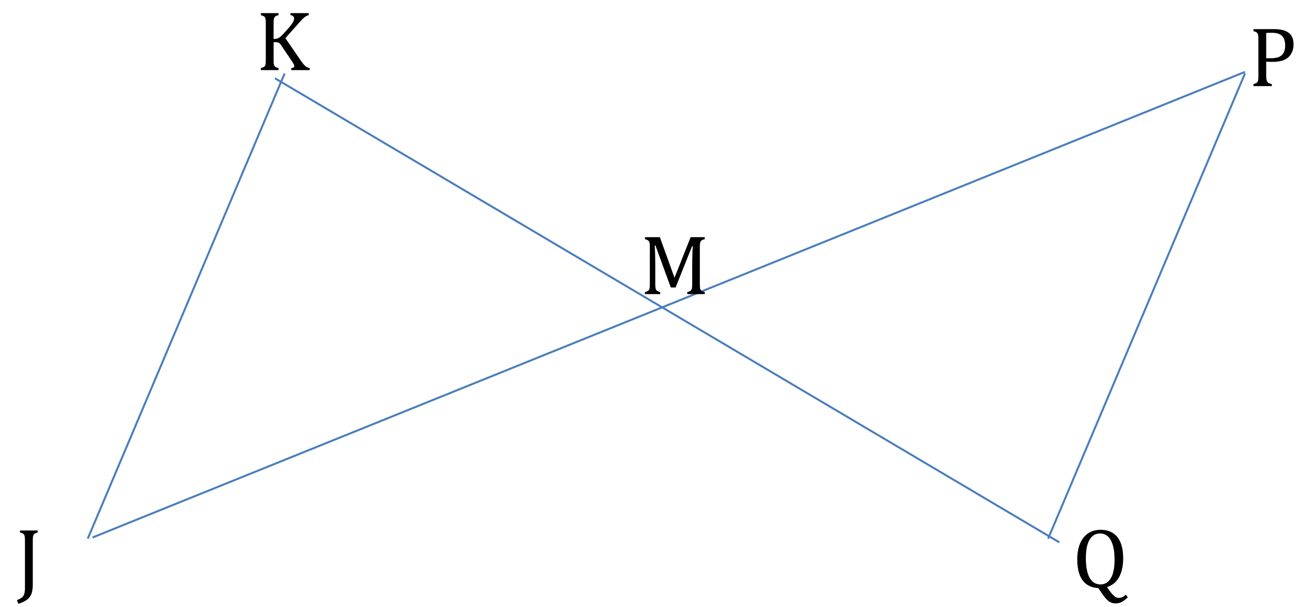


Given: $\overline{PR} \parallel \overline{MG}$, $\overline{MP} \parallel \overline{GR}$



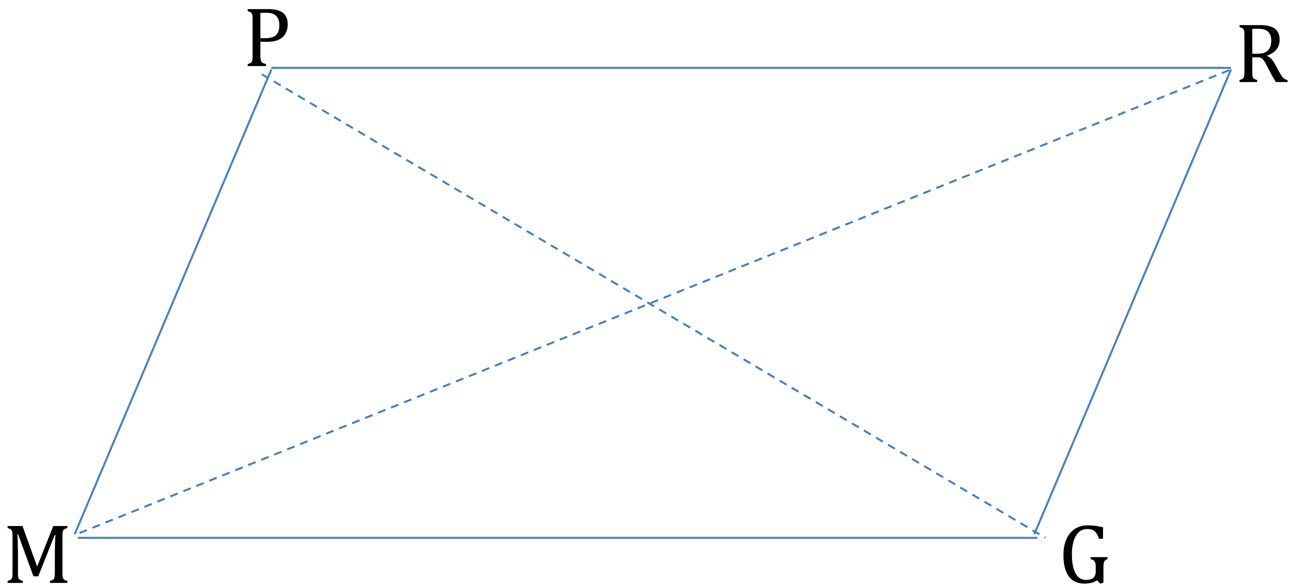
Prove: Each diagonal of PGRM divides PGRM into two congruent triangles

Assignment: Given: $\overline{JK} \parallel \overline{KP}, \overline{JK} \parallel \overline{QP}$



Prove: $\overline{KQ}$ bisects $\overline{JP}$

Given: $\overline{PR} \parallel \overline{MG}, \overline{MP} \parallel \overline{GR}$



Prove: $\overline{PR} \cong \overline{MG}, \overline{MP} \cong \overline{GR}$