

Name the property the statement illustrates.

1. If $\overline{RU} \cong \overline{WX}$ and $\overline{WX} \cong \overline{YZ}$, then $\overline{RU} \cong \overline{YZ}$.

2. $\angle A \cong \angle A$

3. If $\angle B \cong \angle C$, then $\angle C \cong \angle B$.

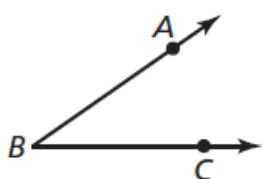
4. $\overline{JK} \cong \overline{JK}$

5. If $\overline{LM} \cong \overline{NP}$, then $\overline{NP} \cong \overline{LM}$.

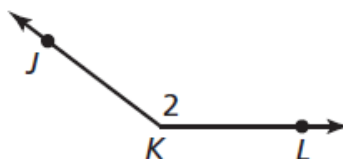
6. If $\angle Q \cong \angle R$ and $\angle R \cong \angle S$, then $\angle Q \cong \angle S$.

Write three names for the angles.

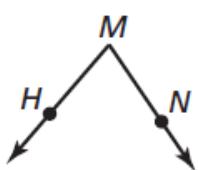
1.



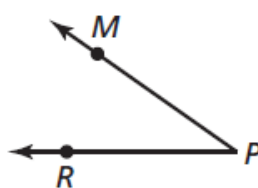
2.



3.



4.

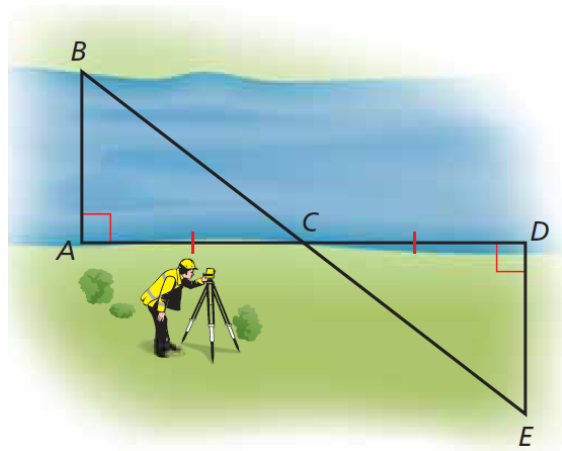


Essential Question

How can you use congruent triangles to make an indirect measurement?

Work with a partner. The figure shows how a surveyor can measure the width of a river by making measurements on only one side of the river.

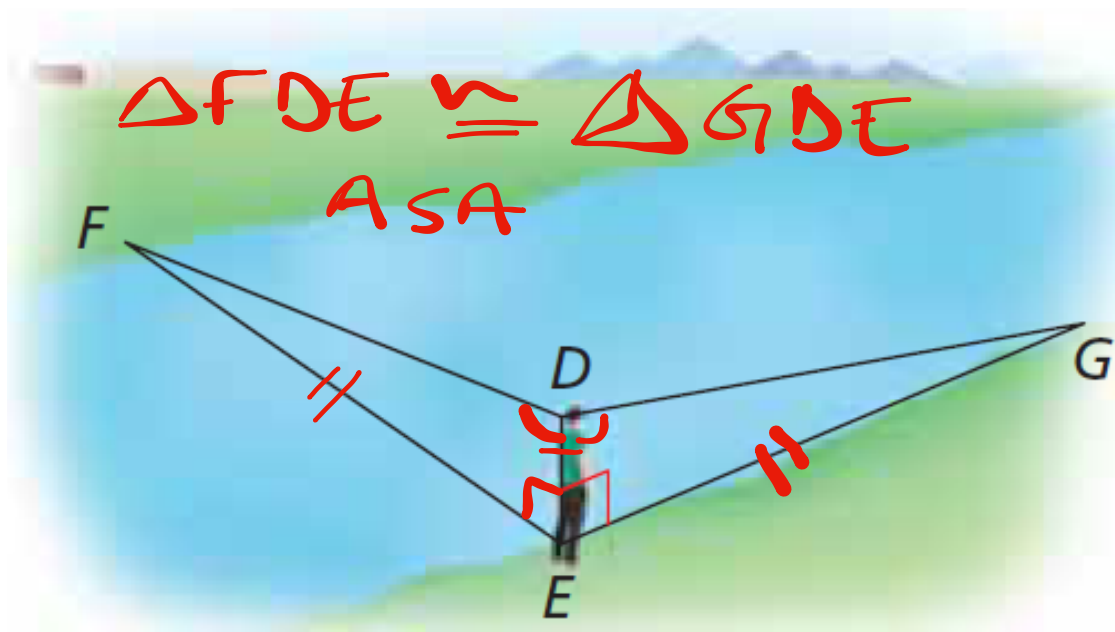
a. Study the figure. Then explain how the surveyor can find the width of the river.



b. Write a proof to verify that the method you described in part (a) is valid.

Given $\angle A$ is a right angle, $\angle D$ is a right angle, $\overline{AC} \cong \overline{CD}$

c. Exchange proofs with your partner and discuss the reasoning used.



a. Study the figure. Then explain how the officer concluded that the width of the river is EG .

b. Write a proof to verify that the conclusion the officer made is correct.

Given $\angle DEG$ is a right angle, $\angle DEF$ is a right angle, $\angle EDG \cong \angle EDF$

c. Exchange proofs with your partner and discuss the reasoning used.

Explain how you can use the given information to prove that the hang glider parts are congruent.

$$\overline{RT} \cong \overline{RT}$$

$$\triangle RTQ \cong \triangle RTS$$



Given $\angle 1 \cong \angle 2$, $\angle RTQ \cong \angle RTS$

Prove $\overline{QT} \cong \overline{ST}$
CPCTC

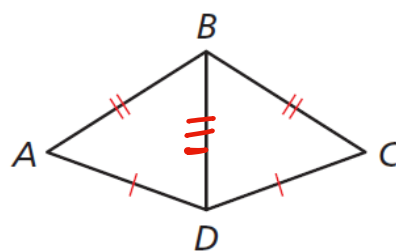
1. Explain how you can prove that $\angle A \cong \angle C$.

$$\triangle ABD \cong \triangle CBD$$

By SSS

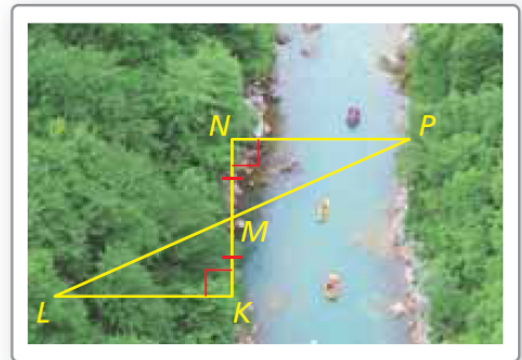
$$\angle A \cong \angle C$$

CPCTC



Use the following method to find the distance across a river, from point N to point P .

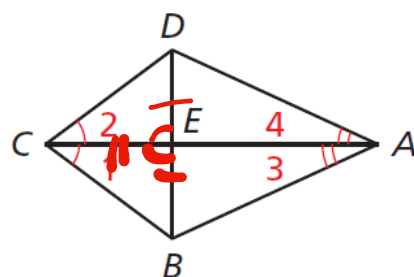
- Place a stake at K on the near side so that $\overline{NK} \perp \overline{NP}$.
 - Find M , the midpoint of \overline{NK} .
 - Locate the point L so that $\overline{NK} \perp \overline{KL}$ and L , P , and M are collinear.
- Explain how this plan allows you to find the distance.



Use the given information to write a plan for proof.

Given $\angle 1 \cong \angle 2$, $\angle 3 \cong \angle 4$

Prove $\triangle BCE \cong \triangle DCE$



- **Response Logs:** Select from “I didn’t expect ...” or “I learned to ...” or “The hardest part right now is”