Name _____ Class _____ Date _____

Reteaching 4-4

Using Congruent Triangles: CPCTC

OBJECTIVE: Using triangle congruence and CPCTC to prove that the parts of two triangles are congruent

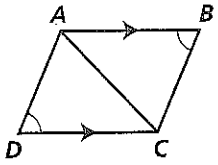
MATERIALS: None

Example

Write a two-column proof.

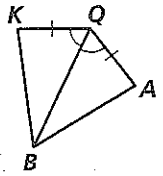
Given: $\overline{AB} \parallel \overline{DC}$, $\angle B \cong \angle D$

Prove: $\overline{BC} \cong \overline{DA}$



Statements	*Reasons*
1. $\overline{AB} \parallel \overline{DC}$	1. Given
2. $\angle BAC \cong \angle DCA$	2. If $\parallel$ lines, then alternate interior $\angle$s are $\cong$.
3. $\angle B \cong \angle D$	3. Given
4. $\overline{AC} \cong \overline{AC}$	4. Reflexive Property of $\cong$
5. $\triangle ABC \cong \triangle CDA$	5. AAS Theorem
6. $\overline{BC} \cong \overline{DA}$	6. CPCTC

Exercises



Complete the two-column proof.

1. Given: $\overline{QK} \cong \overline{QA}$; $\overrightarrow{QB}$ bisects $\angle KQA$

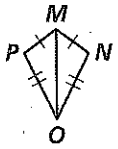
   Prove: $\overline{KB} \cong \overline{AB}$

Statements	*Reasons*
a. ?	1. Given
2. $\angle KQB \cong \angle AQB$	b. ?
c. ?	3. Reflexive Property of $\cong$
4. $\triangle KBQ \cong \triangle ABQ$	d. ?
5. $\overline{KB} \cong \overline{AB}$	e. ?

Write a two-column proof.

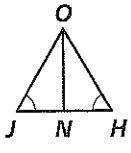
2. Given: $\overline{MN} \cong \overline{MP}$, $\overline{NO} \cong \overline{PO}$

   Prove: $\angle N \cong \angle P$



3. Given: $\overline{ON}$ bisects $\angle JOH$, $\angle J \cong \angle H$

   Prove: $\overline{JN} \cong \overline{HN}$



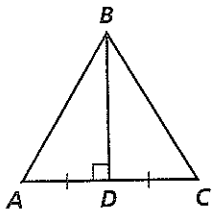
Name _____ Class _____ Date _____

Practice 4-4

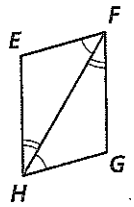
Using Congruent Triangles: CPCTC

Explain how you can use SSS, SAS, ASA, or AAS with CPCTC to prove each statement true.

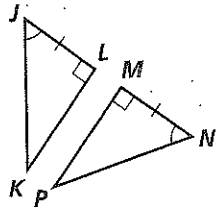
1. $\angle A \cong \angle C$



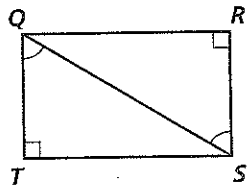
2. $\overline{HE} \cong \overline{FG}$



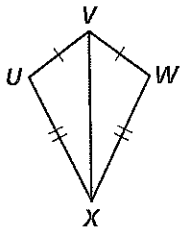
3. $\angle K \cong \angle P$



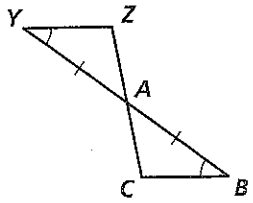
4. $\angle QST \cong \angle SQR$



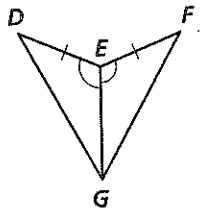
5. $\angle U \cong \angle W$



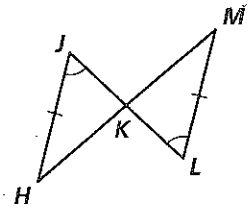
6. $\overline{ZA} \cong \overline{AC}$



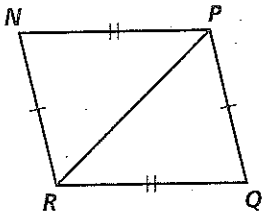
7. $\overline{FG} \cong \overline{DG}$



8. $\overline{JK} \cong \overline{KL}$

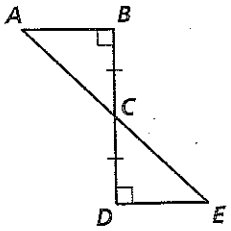


9. $\angle N \cong \angle Q$



Write a Plan for Proof.

10. Given: $\overline{BD} \perp \overline{AB}$, $\overline{BD} \perp \overline{DE}$, $\overline{BC} \cong \overline{CD}$
Prove: $\angle A \cong \angle E$



11. Given: $\overline{FJ} \cong \overline{GH}$, $\angle JFH \cong \angle GHF$
Prove: $\overline{FG} \cong \overline{JH}$