

Day 43

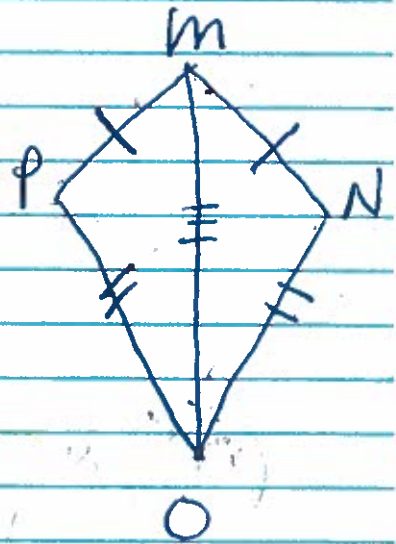
4-4 & 4-7 Using Congruent Δ 's:
CPCTC

"Corresponding Parts of Congruent
Triangles are Congruent"

and you can use "CPCTC" in PROOFS to
prove that other corresponding parts are
 \cong AFTER you prove 2 Δ 's are \cong by
SSS, SAS, ASA, AAS or HL.

4-4 wkst

#2) Statements	Reasons
1. $\overline{MN} \cong \overline{MP}$	Given
2. $\overline{NO} \cong \overline{PO}$	Given
3. $\overline{MO} \cong \overline{MO}$	Reflexive
4. $\Delta MPO \cong \Delta MNO$	SSS
5. $\angle N \cong \angle P$	CPCTC



3.

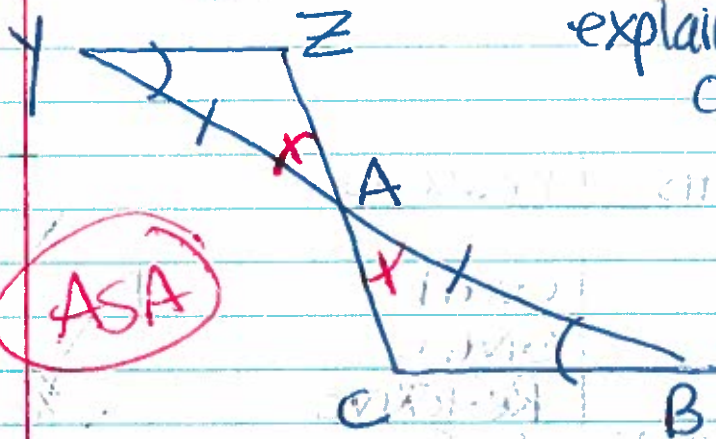


Statements

Reasons

1.	\overline{ON} bisects $\angle JOH$	Given
2.	$\angle J \cong \angle H$	Given
3.	$\angle JON \cong \angle HON$	Def. of \angle bisector
4.	$\overline{ON} \cong \overline{ON}$	Reflexive
5.	$\triangle JON \cong \triangle HON$	AAS
6.	$\overline{JN} \cong \overline{HN}$	CPCTC

(ex)

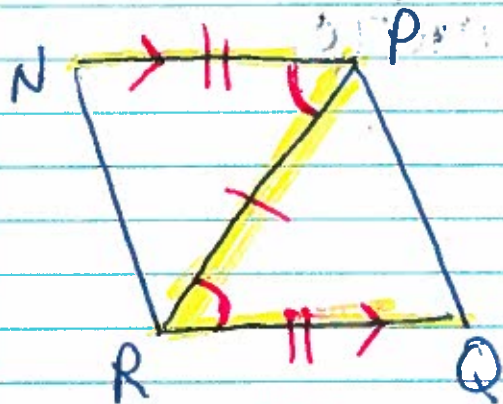


explain how you can use CPCTC to prove

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

ASA

(ex)



Given: $\overline{NP} \cong \overline{RQ}$
 $NP \parallel RQ$

explain how to prove $\angle N \cong \angle Q$ by CPCTC

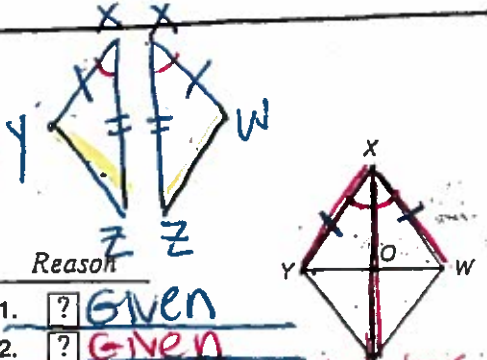
SAS

4.6 CPCTC

Name _____

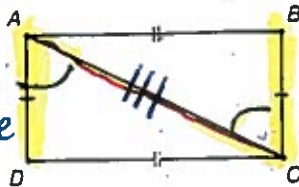
In 1 and 2, complete the proofs.

1. Given: $\overline{YX} \cong \overline{WX}$ ✓
 \overline{ZX} bisects $\angle YXW$ ✓
 Prove: $\overline{YZ} \cong \overline{WZ}$



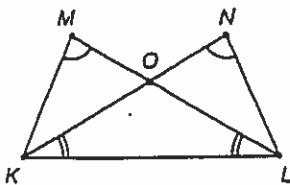
Statement	Reason
1. $\overline{YX} \cong \overline{WX}$	1. ? GIVEN
2. \overline{ZX} bisects $\angle YXW$	2. ? GIVEN
3. $\angle YXZ \cong \angle WXZ$	3. ? DEF. OF \angle bisector
4. $\overline{XZ} \cong \overline{XZ}$	4. ? REFLEXIVE
5. $\triangle YXZ \cong \triangle WXZ$	5. ? SAS
6. $\overline{YZ} \cong \overline{WZ}$	6. ? CPCTC

2. Given: $\overline{AD} \cong \overline{BC}$ ✓
 $\overline{AB} \cong \overline{DC}$ ✓
 Prove: $\overline{AD} \parallel \overline{BC}$ ← need to prove alternate interior \angle s are \cong

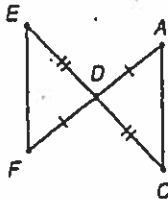


Statement	Reason
1. $\overline{AD} \cong \overline{BC}$	1. ? GIVEN
2. $\overline{AB} \cong \overline{DC}$	2. ? GIVEN
3. $\overline{AC} \cong \overline{AC}$	3. ? REFLEXIVE
4. $\triangle CAD \cong \triangle ACB$	4. ? SSS
5. $\angle DAC \cong \angle BCA$	5. ? CPCTC
6. $\overline{AD} \parallel \overline{BC}$	6. ? Converse of Alt. Int. \angle Thm

3. Given: $\angle M \cong \angle N$
 $\angle OKL \cong \angle OLK$
 Prove: $\overline{MO} \cong \overline{NO}$



4. Given: D is the midpoint of \overline{AF}
 D is the midpoint of \overline{EC}
 Prove: $\overline{AC} \cong \overline{FE}$



statements

Reasons

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.

statements

Reasons

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.

(2)

Statements	Reasons
1. $\angle MLP \cong \angle QPN$	Given
2. $\angle LMP \cong \angle QNP$	Given
3. $LP \cong LP$	Reflexive
4. $\triangle LMP \cong \triangle QNP$	AAS
5. $LM \cong QN$	CPCTC
6. $\angle LNM \cong \angle PNQ$	Vertical \angle Thm
7. $\triangle MLN \cong \triangle QNP$	AAS

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#2 (5 steps)

#3 (5 steps)

#6 5 steps

#7 5 steps

#11 5 steps

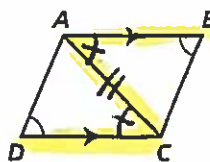
Reteaching 4-4

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

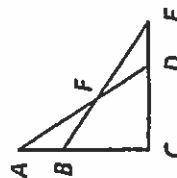
1. $\overline{AB} \parallel \overline{DC}$
2. $\angle BAC \cong \angle DCA$
3. $\angle B \cong \angle D$
4. $\overline{AC} \cong \overline{AC}$
5. $\triangle ABC \cong \triangle CDA$
6. $\overline{BC} \cong \overline{DA}$

Reasons

1. Given
2. Alternate Int. \angle Thm
3. Given
4. Reflexive
5. AAS
6. CPCTC

3. Given: $\overline{AB} \cong \overline{ED}$,
 $\overline{BC} \cong \overline{DC}$

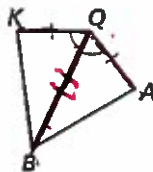
Prove: $\triangle ABF \cong \triangle EDF$



Exercises:

Complete the two-column proof.

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



Statements

- a. $\overline{QK} \cong \overline{QA}$, \overline{QB} bisects $\angle KQA$
2. $\angle KQB \cong \angle AQB$
- c. $\overline{QB} \cong \overline{QB}$
4. $\triangle KBQ \cong \triangle ABQ$
5. $\overline{KB} \cong \overline{AB}$

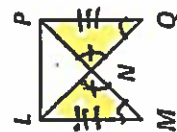
Reasons

1. Given
- b. Def. of \angle bisector
3. Reflexive Property of \cong
- d. SAS
- e. CPCTC

Write a Plan for Proof.

2. Given: $\angle MLP \cong \angle QPL$,
 $\angle M \cong \angle Q$

Prove: $\triangle MLN \cong \triangle QPN$



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

