

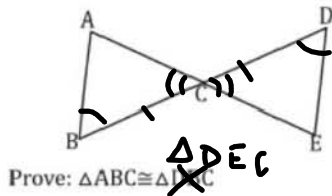
Geometry CC – Mr. Valentino  
Unit 5 Lesson 6: CPCTC



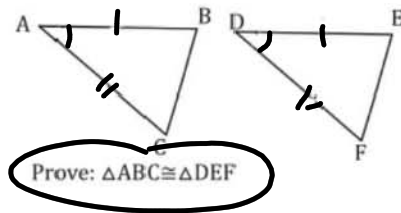
Name: \_\_\_\_\_  
Date: \_\_\_\_\_ Period: \_\_\_\_\_

Let's go over the proofs from Tuesday!

1. Given:  $\overline{AE}$  Bisects  $\overline{BD}$ ,  $\angle B \cong \angle D$



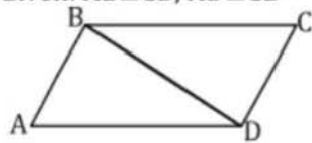
2. Given:  $\overline{AB} \cong \overline{DE}$ ,  $\overline{AC} \cong \overline{DF}$ , and  $\angle A \cong \angle D$



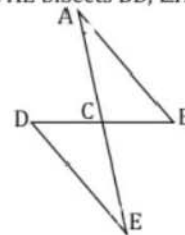
| Statement                                  | Reason  |
|--|---|
| 1. $\overline{AE}$ bisects $\overline{BD}$ | 1. Given  |
| 2. $\angle B \cong \angle D$               | 2. Given  |
| 3. $\overline{BC} \cong \overline{DC}$     | 3. $\overline{AE}$ bisector cuts $\overline{BD}$ into 2 $\cong$ segs. |
| 4. $\angle ACB \cong \angle ECD$           | 4. Vert. $\angle$ 's are $\cong$                                      |
| 5. $\triangle ABC \cong \triangle DEC$     | 5. ASA $\cong$ ASA  |

| Statement                              | Reason             |
|--|--------------------|
| 1. $\overline{AB} \cong \overline{DE}$ | 1. Given           |
| 2. $\overline{AC} \cong \overline{DF}$ | 2. Given           |
| 3. $\angle A \cong \angle D$           | 3. Given           |
| 4. $\triangle ABC \cong \triangle DEF$ | 4. SAS $\cong$ SAS |

3. Given:  $\overline{AB} \cong \overline{CD}$ ,  $\overline{AD} \cong \overline{CB}$



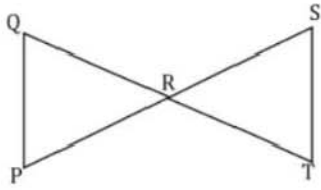
4. Given:  $\overline{AE}$  bisects  $\overline{BD}$ ,  $\angle A \cong \angle E$



| Statement | Reason |
|-----------|--------|
| 1.        | 1.     |
| 2.        | 2.     |
| 3.        | 3.     |
| 4.        | 4.     |

| Statement | Reason |
|-----------|--------|
| 1.        | 1.     |
| 2.        | 2.     |
| 3.        | 3.     |
| 4.        | 4.     |

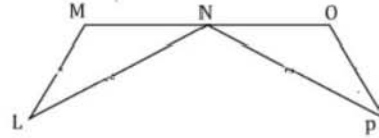
5. Given:  $\overline{QT}$  bisects  $\overline{SP}$ ,  $\overline{SP}$  bisects  $\overline{QT}$



Prove:  $\triangle QRP \cong \triangle SRT$

| Statement | Reason |
|-----------|--------|
| 1.        | 1.     |
| 2.        | 2.     |
| 3.        | 3.     |
| 4.        | 4.     |
| 5.        | 5.     |
| 6.        | 6.     |

6. Given: N is the midpoint of  $\overline{MO}$ ,  $\overline{LM} \cong \overline{OP}$ , and  $\overline{LN} \cong \overline{PN}$



Prove:  $\triangle LMN \cong \triangle PON$

| Statement | Reason |
|-----------|--------|
| 1.        | 1.     |
| 2.        | 2.     |
| 3.        | 3.     |
| 4.        | 4.     |
| 5.        | 5.     |

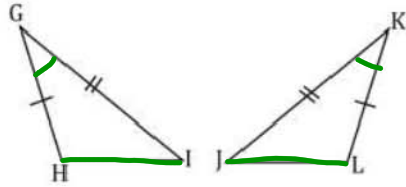
It is now time to discuss the ever-important CPCTC!

**C**ORRESPONDING  
**P**ARTS OF  
**C**ONGRUENT  
**T**RIANGLES ARE  
**C**ONGRUENT

It is crucial to remember that before you use CPCTC you must first prove that the triangles in the question are congruent. Let's practice...

①

Given:  $\overline{GH} \cong \overline{KL}$ ,  $\angle G \cong \angle K$ , and  $\overline{GI} \cong \overline{KJ}$

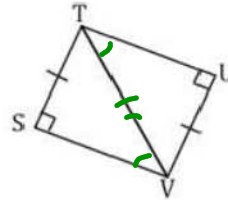


Prove:  $\overline{HI} \cong \overline{LJ}$

| Statements                             | Reasons            |
|--|--------------------|
| 1. $\overline{GH} \cong \overline{KL}$ | 1. Given           |
| 2. $\angle G \cong \angle K$           | 2. Given           |
| 3. $\overline{GI} \cong \overline{KJ}$ | 3. Given           |
| 4. $\triangle GHI \cong \triangle KJL$ | 4. SAS $\cong$ SAS |
| 5. $\overline{HI} \cong \overline{LJ}$ | 5. CPCTC           |

②

Given:  $\overline{ST} \cong \overline{VU}$

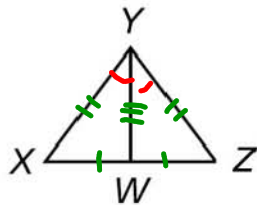


Prove:  $\angle SVT \cong \angle UTV$

| Statements                             | Reasons               |
|--|-----------------------|
| 1. $\overline{ST} \cong \overline{VU}$ | 1. Given              |
| 2. $\overline{TV} \cong \overline{TV}$ | 2. Reflexive Property |
| 3. $\triangle STV \cong \triangle UVV$ | 3. HL $\cong$ HL      |
| 4. $\angle SVT \cong \angle UTV$       | 4. CPCTC              |

**Given:**  $\overline{YW}$  bisects  $\overline{XZ}$ ,  $\overline{XY} \cong \overline{YZ}$ .

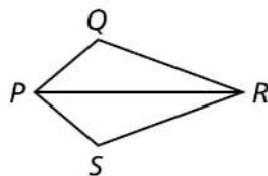
**Prove:**  $\angle XYW \cong \angle ZYW$



| Statement                                  | Reason   |
|--|--|
| 1. $\overline{YW}$ bisects $\overline{XZ}$ | 1. Given   |
| 2. $\overline{XW} \cong \overline{ZW}$     | 2. a segment bisector cuts a segment into 2 $\cong$ parts. |
| 3. $\overline{XY} \cong \overline{YZ}$     | 3. Given   |
| 4. $\overline{YW} \cong \overline{YW}$     | 4. Reflexive Property                                      |
| 5. $\triangle XYW \cong \triangle ZYW$     | 5. SSS $\cong$ SSS   |
| 6. $\angle XYW \cong \angle ZYW$           | 6. CPCTC   |

**Given:**  $\overline{PR}$  bisects  $\angle QPS$  and  $\angle QRS$ .

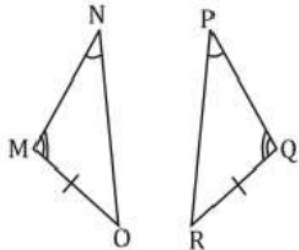
**Prove:**  $\overline{PQ} \cong \overline{PS}$



| Statement | Reason |
|-----------|--------|
| 1.        | 1.     |
| 2.        | 2.     |
| 3.        | 3.     |
| 4.        | 4.     |
| 5.        | 5.     |
| 6.        | 6.     |

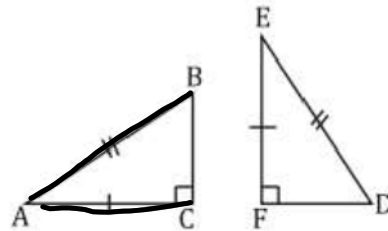
Write a 2-column proof to prove each of the following:

1. Given:  $\angle N \cong \angle P$ ,  $\angle M \cong \angle Q$ , and  $\overline{MO} \cong \overline{QR}$



Prove:  $\angle O \cong \angle R$

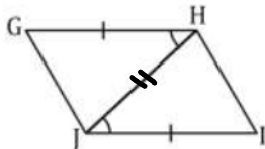
2. Given:  $\overline{AC} \cong \overline{EF}$ , and  $\overline{AB} \cong \overline{ED}$



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

| Statement                   | Reason |
|-----------------------------|--------|
| ① $\angle N \cong \angle P$ |        |

3. Given:  $\overline{GH} \cong \overline{JI}$ ,  $\angle GHJ \cong \angle IJH$



Prove:  $\overline{GJ} \cong \overline{HI}$

$\triangle GHI \cong \triangle IJH$  SAS  $\cong$  SAS

CPCTC