

\*We use CPCTC AFTER we prove  $\Delta$ 's  $\cong$  !

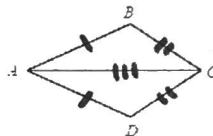
<p>If <math>\Delta ABC \cong \Delta DEF</math>, then</p> <p><math>\overline{AB} \cong \overline{DE}</math>    <math>\angle A \cong \angle D</math></p> <p><math>\overline{BC} \cong \overline{EF}</math>    <math>\angle B \cong \angle E</math></p> <p><math>\overline{AC} \cong \overline{DF}</math>    <math>\angle C \cong \angle F</math></p>	
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## TRIANGLE PROOFS & CPCTC

What is CPCTC?	Stands for: <u>Corresponding parts of Congruent Triangles are Congruent</u>
Use when asked to prove <u>if parts are congruent</u> .	
••But first, you must prove the <u>triangles are congruent</u> !	

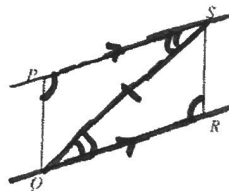
### EXAMPLES WITH CPCTC:

1. Given:  $\overline{AB} \cong \overline{AD}$      $\overline{BC} \cong \overline{CD}$   
 Prove:  $\angle BCA \cong \angle DCA$



Statements	Reasons
1. $\overline{AB} \cong \overline{AD}$	1. Given
2. $\overline{BC} \cong \overline{CD}$	2. Given
3. $\overline{AC} \cong \overline{AC}$	3. Reflexive Prop.
4. $\Delta ABC \cong \Delta ADC$	4. SSS
5. $\angle BCA \cong \angle DCA$	5. CPCTC

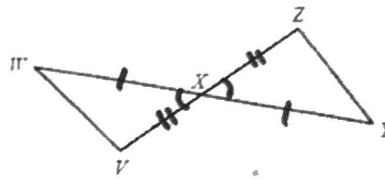
2. Given:  $\overline{PS} \parallel \overline{QR}$      $\angle QPS \cong \angle SRQ$   
 Prove:  $\overline{PQ} \cong \overline{RS}$



Statements	Reasons
1. $\overline{PS} \parallel \overline{QR}$	1. Given
2. $\angle PSQ \cong \angle RQS$	2. Alt. int $\angle$ 's
3. $\angle QPS \cong \angle SRQ$	3. Given
4. $\overline{QS} \cong \overline{QS}$	4. Reflexive Prop.
5. $\Delta PSQ \cong \Delta RQS$	5. AAS
6. $\overline{PQ} \cong \overline{RS}$	6. CPCTC

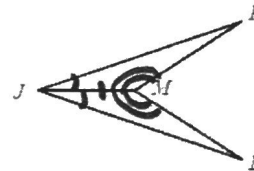
3.10 Guided Notes (CPCTC)

3. Given:  $X$  is the midpoint of  $\overline{WY}$  and  $\overline{VZ}$   
 Prove:  $\triangle WVX \cong \triangle XYZ$



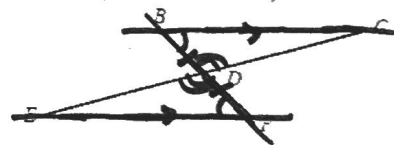
Statements	Reasons
1. $X$ is mp of $\overline{WY}$ & $\overline{VZ}$	1. Given
2. $\overline{WX} \cong \overline{XY}$	2. Def. of midpoint
3. $\overline{VX} \cong \overline{XZ}$	3. Def. of midpoint
4. $\angle WXV \cong \angle ZXY$	4. Vertical angles
5. $\triangle WVX \cong \triangle XYZ$	5. SAS
6. $\angle XVW \cong \angle XYZ$	6. CPCTC

4. Given:  $\overline{JM}$  bisects  $\angle KJL$ .  $\angle JMK \cong \angle JML$   
 Prove:  $\overline{JK} \cong \overline{JL}$



Statements	Reasons
1. $\overline{JM}$ bisects $\angle KJL$	1. Given
2. $\angle KJM \cong \angle MJL$	2. Def. of bisector
3. $\angle JMK \cong \angle JML$	3. Given
4. $\overline{JM} \cong \overline{JM}$	4. Reflexive Prop.
5. $\triangle JMK \cong \triangle JML$	5. ASA
6. $\overline{JK} \cong \overline{JL}$	6. CPCTC

5. Given:  $\overline{BC} \parallel \overline{EF}$ ,  $D$  is the midpoint of  $\overline{BF}$   
 Prove:  $\overline{ED} \cong \overline{DC}$



Statements	Reasons
1. $\overline{BC} \parallel \overline{EF}$	1. Given
2. $\angle CBD \cong \angle FED$	2. Alt. int $\angle$ 's
3. $D$ is mp of $\overline{BF}$	3. Given
4. $\overline{BD} \cong \overline{DF}$	4. Def. of midpoint
5. $\angle BDC \cong \angle FDE$	5. Vertical $\angle$ 's
6. $\triangle BDC \cong \triangle FDE$	6. ASA
7. $\overline{ED} \cong \overline{DC}$	7. CPCTC