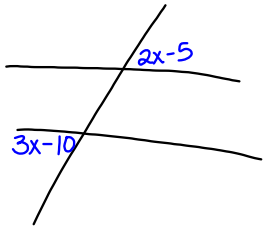
Congruent Triangles
(part 4)

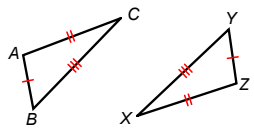
title



$3x-10=2x-5$
$x-10=-5$
$x=5$

Nov 3-8:27 AM

Once you are able to prove two triangles are congruent, you are then able to show that all pairs of corresponding parts of congruent triangles are congruent (known as CPCTC).



$\angle A \cong \angle Z$
$\angle B \cong \angle Y$
$\angle C \cong \angle X$

SSS

cpctc

When you are trying to prove two triangles are congruent and you are given parallel lines/segments, look for corresponding angles and alternate interior angles because they are congruent.

Corresponding Angles Postulate

If two parallel lines are cut by a transversal, then the pairs of corresponding angles are congruent.

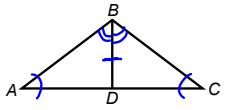
Alternate Interior Angles Theorem

If two parallel lines are cut by a transversal, then the pairs of alternate interior angles are congruent.

parallel lines

Given: $\angle A \cong \angle C$
$\angle ABD \cong \angle CBD$

Prove: $\overline{AD} \cong \overline{CD}$



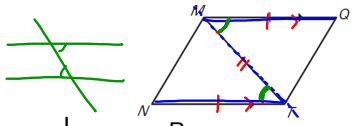
AAS

Statements	Reasons
① $\angle A \cong \angle C$	① Given
② $\angle ABD \cong \angle CBD$	② Given
③ $\overline{BD} \cong \overline{BD}$	③ Reflexive
④ $\triangle ABD \cong \triangle CBD$	④ AAS
⑤ $\overline{AD} \cong \overline{CD}$	⑤ CPCTC

example

Given: $\overline{MQ} \cong \overline{TN}$
$\overline{MQ} \parallel \overline{TN}$

Prove: $\angle Q \cong \angle N$



SAS

Statements	Reasons
① $\overline{MQ} \cong \overline{TN}$	① Given
② $\overline{MQ} \parallel \overline{TN}$	② Given
③ $\angle QMT \cong \angle NTM$	③ Alt. Int $\angle$s $\cong$
④ $\overline{MT} \cong \overline{TM}$	④ Reflexive
⑤ $\triangle QMT \cong \triangle NTM$	⑤ SAS
⑥ $\angle Q \cong \angle N$	⑥ CPCTC

example

Conclusion

1. **What does CPCTC stand for?**
Corr parts $\cong$ $\triangle$s $\cong$

2. **What do you have to do first before you can use CPCTC?**
Prove $\triangle$s $\cong$

3. **What ways can you prove triangles congruent?** SSS, SAS, AAS, ASA, HL

Assignment

Congruent Triangles Wkst #4

Nov 2-2:03 PM

Nov 2-2:04 PM