Congruent Triangles

Objective

We will analyze congruent triangles

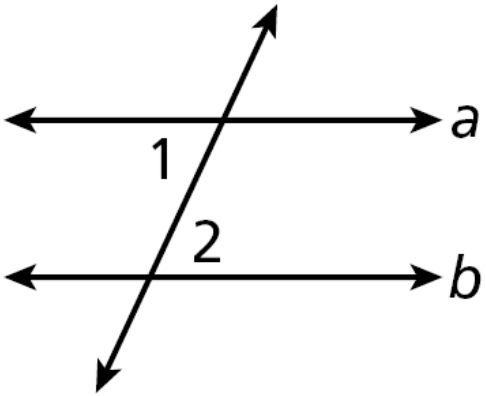
Warm Up

1. If $\Delta ABC \cong \Delta DEF$, then $\angle A \cong$ __?__ and $BC \cong$ __?__.

   $\angle D$ $\overline{EF}$

2. If $a||b$, why is $\angle 1 \cong \angle 2$?

   Alternate Interior Angles are congruent



3. List postulates used to prove two triangles similar:

   SSS, SAS, AA

Two triangles are congruent if they have three sides that are the same length, and three angles that are the same measure.

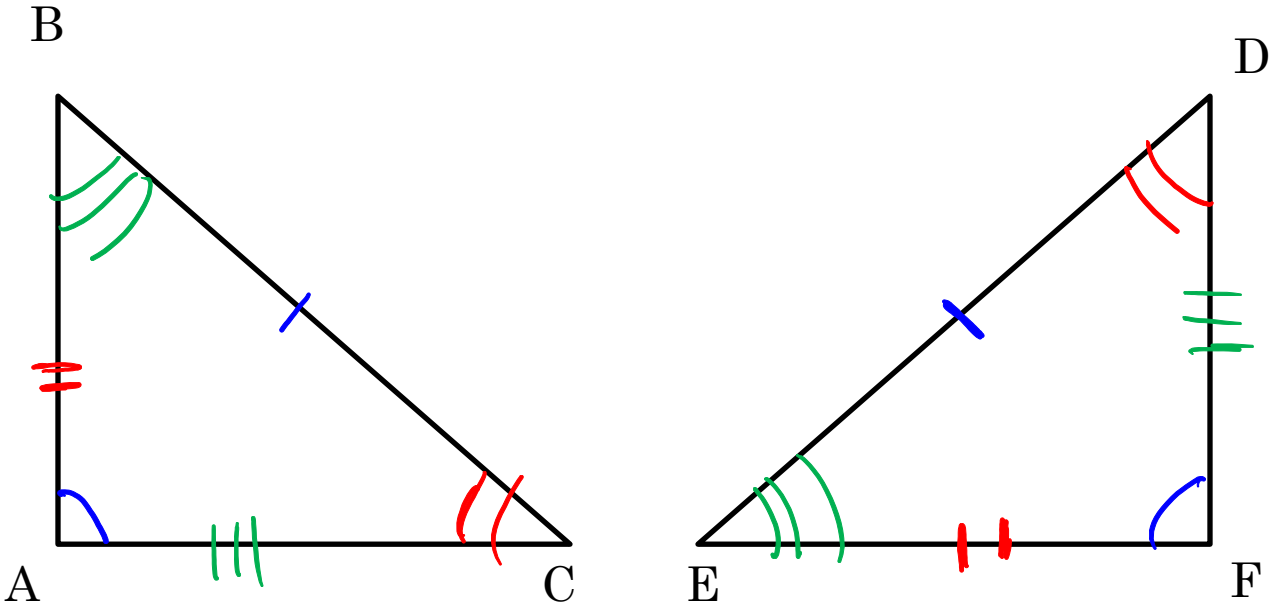
Vocab

CPCTC is an abbreviation for the phrase "Corresponding Parts of Congruent Triangles are Congruent." It can be used as a justification in a proof after you have proven two triangles congruent.

Congruent Triangles

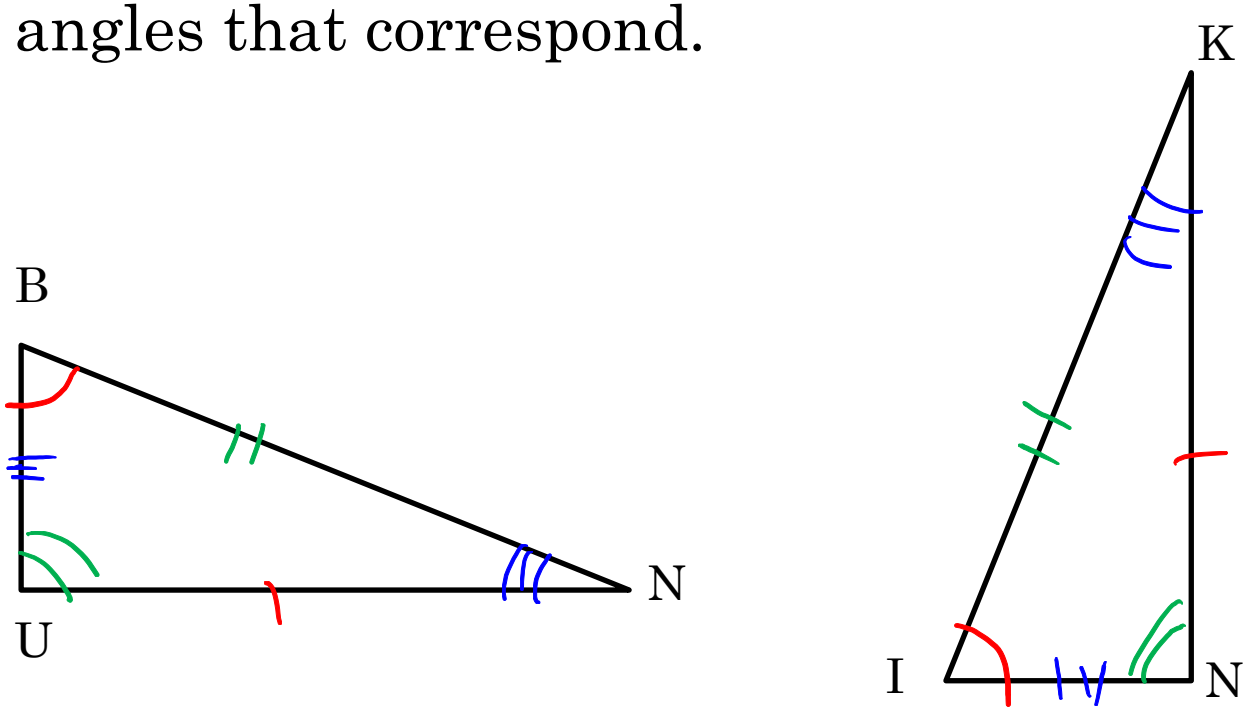
If all 6 pairs of corresponding parts (sides and angles) are congruent, then two triangles are said to be congruent.

Given $\Delta ABC \cong \Delta FED$, list the pairs of sides and angles that correspond.



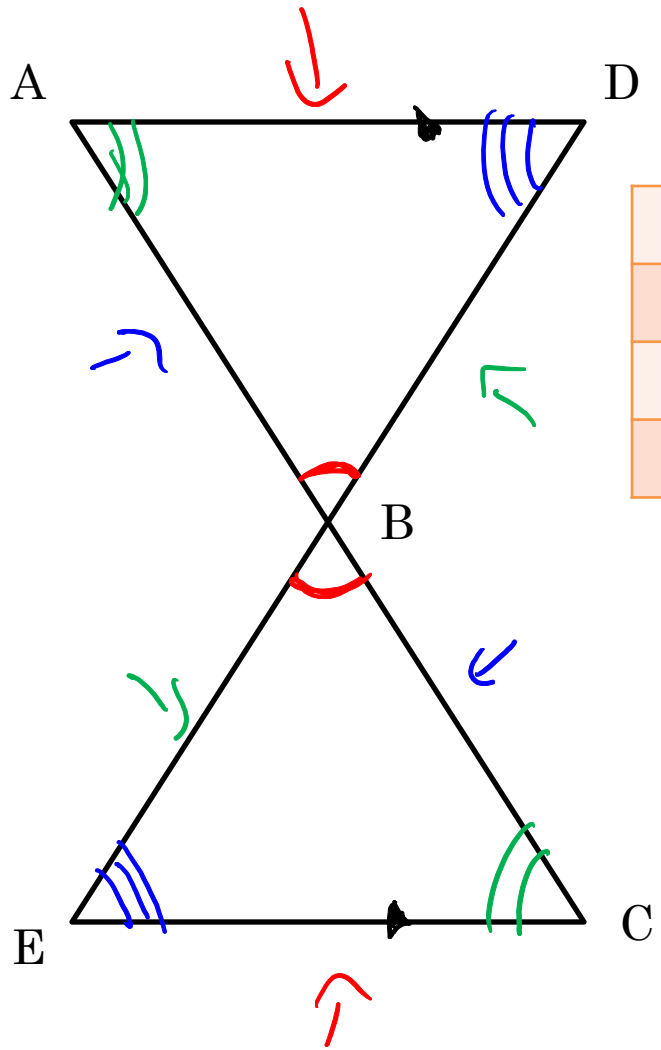
$\angle A$	$\cong$	$\angle F$
$\angle C$	$\cong$	$\angle D$
$\angle B$	$\cong$	$\angle E$
$\overline{BC}$	$\cong$	$\overline{ED}$
$\overline{AB}$	$\cong$	$\overline{FE}$
$\overline{AC}$	$\cong$	$\overline{FD}$

Given $\Delta BUN \cong \Delta INK$, list the pairs of sides and angles that correspond.



$\angle B$	$\cong \angle I$
$\angle U$	$\cong \angle N$
$\angle N$	$\cong \angle K$
$\overline{BN}$	$\cong \overline{IK}$
$\overline{UN}$	$\cong \overline{NK}$
$\overline{BU}$	$\cong \overline{IN}$

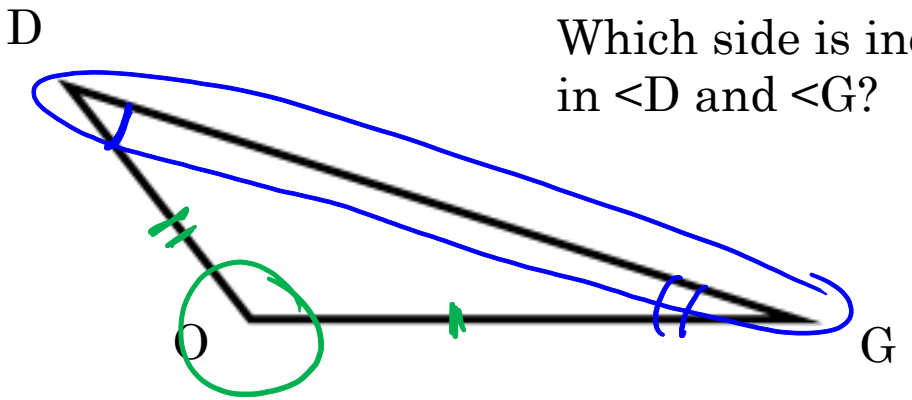
What about these triangles?



Sides	Angles
$\overline{AD}$, $\overline{EC}$	$\angle ABD \cong \angle EBC$
$\overline{EB}$, $\overline{DB}$	$\angle C \cong \angle A$
$\overline{AB}$, $\overline{BC}$	$\angle D \cong \angle E$

Vocab: Parts of a Triangle

- Included side: the side that is between the 2 given angles



Which side is included in <D and <G?

$\overline{DG}$

- Included Angle: The angle that is between the 2 given sides.

Which angle is included in OG and DO?

$\angle O$