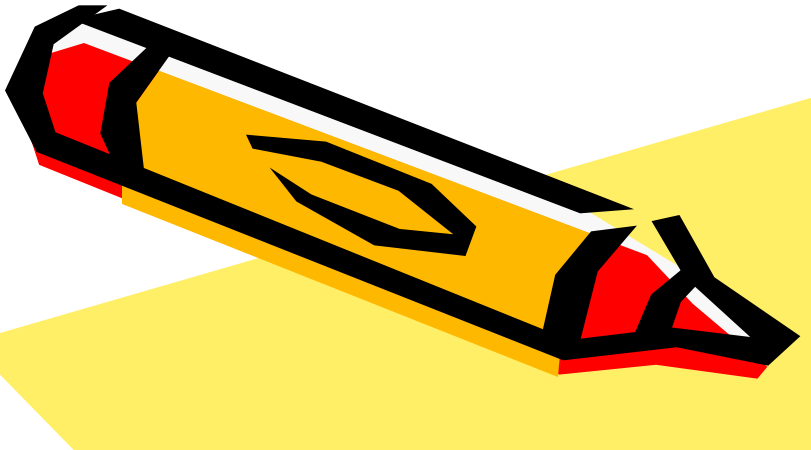
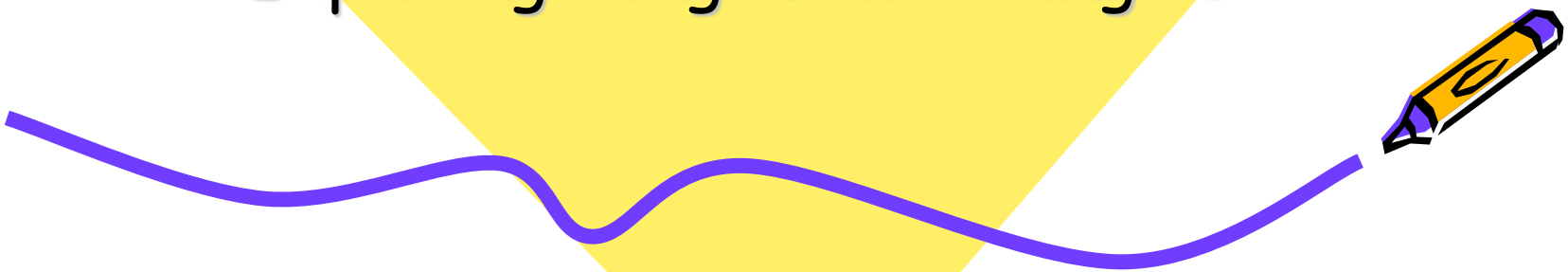


Geometry

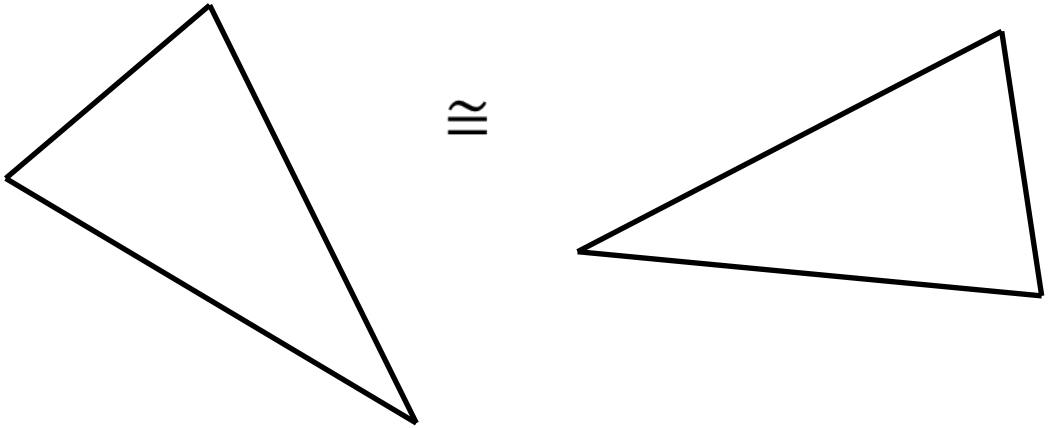
Exploring Congruent Triangles



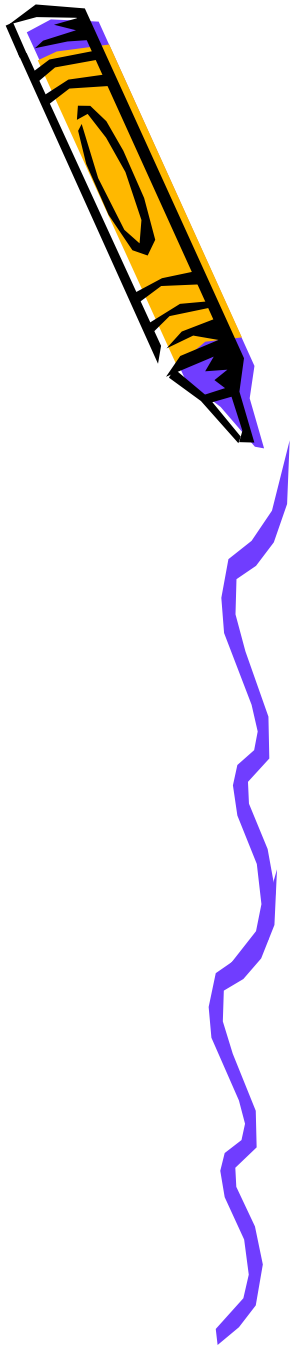
Vocabulary

- Congruent (≅): same shape, same size

Congruence is not effected by translation, rotation, or reflection



Vocabulary



- Congruent Triangles:

  Two triangles are congruent if and only if their corresponding parts are congruent

- CPCTC:

  Corresponding Parts of Congruent Triangles are Congruent

These statements are used interchangeably

CPCTC

When writing congruence statements, it is important to name the letters of the vertices in corresponding order.

$\triangle ABC \cong \triangle QRS$

Vertex A corresponds to Vertex Q
Vertex B corresponds to Vertex R
Vertex C corresponds to Vertex S

$A \leftrightarrow Q$
$B \leftrightarrow R$
$C \leftrightarrow S$

$\leftrightarrow$ means "corresponds to"

CPCTC

Therefore…given,

$\triangle ABC \cong \triangle QRS$

$\angle A \leftrightarrow \angle Q$
$\angle B \leftrightarrow \angle R$
$\angle C \leftrightarrow \angle S$

$\overline{AB} \leftrightarrow \overline{QR}$
$\overline{BC} \leftrightarrow \overline{RS}$
$\overline{AC} \leftrightarrow \overline{QS}$

AND

$\angle A \cong \angle Q$
$\angle B \cong \angle R$
$\angle C \cong \angle S$

$\overline{AB} \cong \overline{QR}$
$\overline{BC} \cong \overline{RS}$
$\overline{AC} \cong \overline{QS}$

CPCTC

When writing congruence statements, it is important to name the letters of the vertices in corresponding order.

Name the first triangle however you choose, but the second must be in corresponding order.

△ ABC ≅ △ QRS

△ BAC ≅ △ RQS

△ CAB ≅ △ SQR

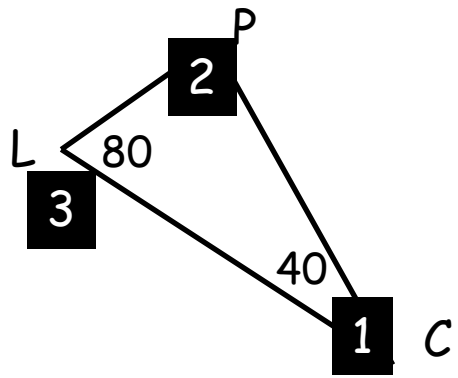
△ ACB ≅ △ QSR

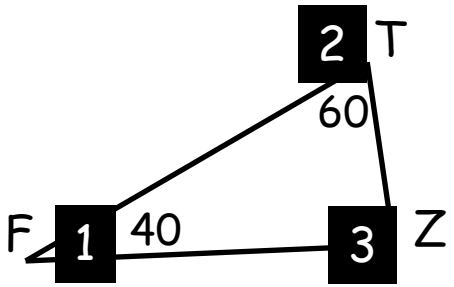
△ BCA ≅ △ RSQ

△ CBA ≅ △ SRQ

Congruence Statements Strategy

Mark off the congruent / corresponding angle pairs as: 1, 2, 3





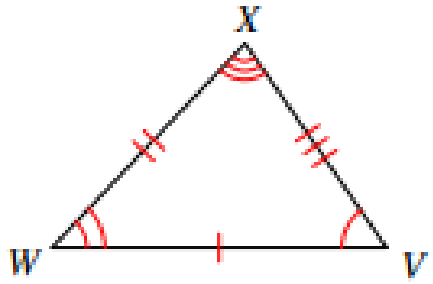
Use this to name things in corresponding order:

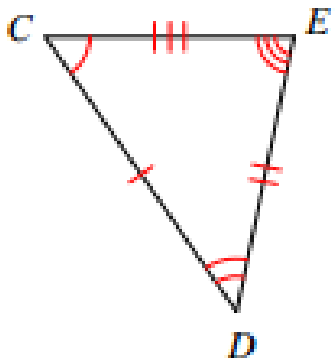
The side that goes from ∠1 to ∠2 → $\overline{CP} \cong \overline{FT}$, $\overline{LC} \cong \overline{ZF}$

$\angle PCL \cong \angle TFZ$, $\angle CLP \cong \angle FZT$ ← Note the order of the letters. It follows the pattern: 213

Congruence Statements

Complete each congruence statement:





1. $\overline{WV} \cong$ _____

2. $\angle ECD \cong$ _____

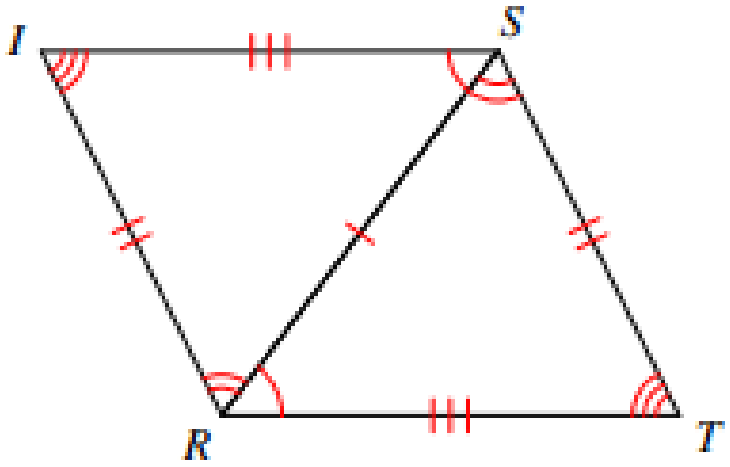
3. $\overline{EC} \cong$ _____

4. $\angle VWX \cong$ _____

5. $\triangle XVW \cong$ _____

Congruence Statements

Complete each congruence statement:



1. $\overline{ST} \cong$ ____

2. $\angle ISR \cong$ _____

3. $\overline{SI} \cong$ ____

4. $\angle RST \cong$ _____

5. $\triangle STR \cong$ _____