

Geometry

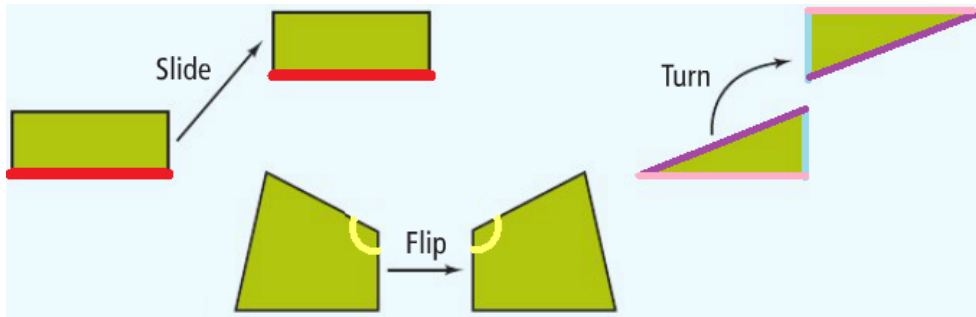
Chapter 4 Section 1

Vocabulary

Congruent
Polygons

Polygons that have congruent corresponding parts (angles and sides). Must be listed in the same order.

Congruent Shapes



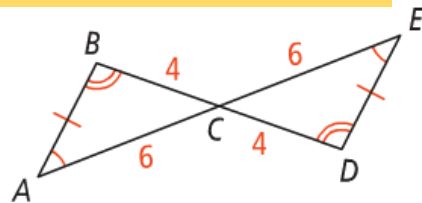
Determining Shapes Congruent

Are the triangles congruent?

$$\overline{AB} \cong \overline{ED}$$

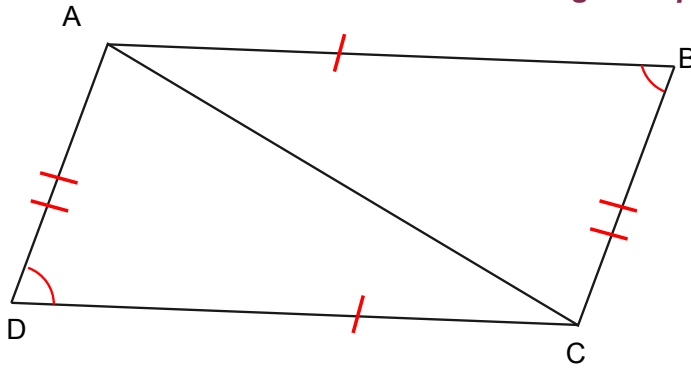
Given

NOT: $\triangle ABC \cong \triangle CDE$



Congruent Parts

*ABC and CDA are congruent triangles.
List all congruent parts.*



Third Angle Theorem

take note

Theorem 4-1 Third Angles Theorem

Theorem

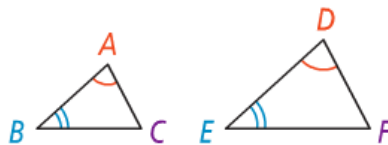
If two angles of one triangle are congruent to two angles of another triangle, then the third angles are congruent.

If ...

$\angle A \cong \angle D$ and $\angle B \cong \angle E$

Then ...

$\angle C \cong \angle F$

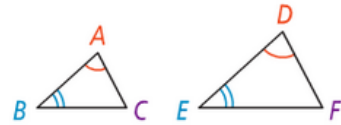


Proof

Statements

Reasons

$$\angle A \cong \angle D, \angle B \cong \angle E$$

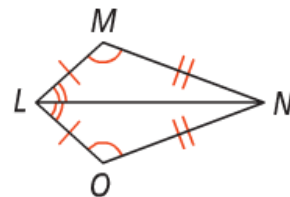


$$\angle C \cong \angle F$$

Proving Triangles Congruent

Given: $\overline{LM} \cong \overline{LO}, \overline{MN} \cong \overline{ON},$
 $\angle M \cong \angle O, \angle MLN \cong \angle OLN$

Prove: $\triangle LMN \cong \triangle LON$



Statements

Reasons

1) $\overline{LM} \cong \overline{LO}, \overline{MN} \cong \overline{ON}$

1) Given

2) $\overline{LN} \cong \overline{LN}$

2) Reflexive Property of \cong

3) $\angle M \cong \angle O, \angle MLN \cong \angle OLN$

3) Given

4) $\angle MNL \cong \angle ONL$

4) Third Angles Theorem

5) $\triangle LMN \cong \triangle LON$

5) Definition of \cong triangles

Homework

Pages 222-223

#8-20 even, 30, 31, 32