

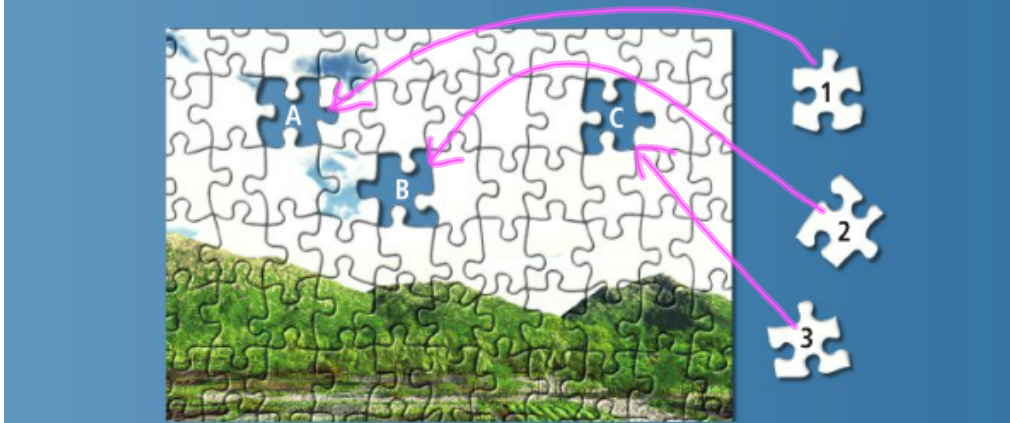
Geometry

Chapter 4

Section 4-1

May 13-10:02 PM

You are working on a puzzle. You've almost finished, except for a few pieces of the sky. Place the remaining pieces in the puzzle. How did you figure out where to place the pieces?



Oct 7-5:32 PM

Congruent
Polygons

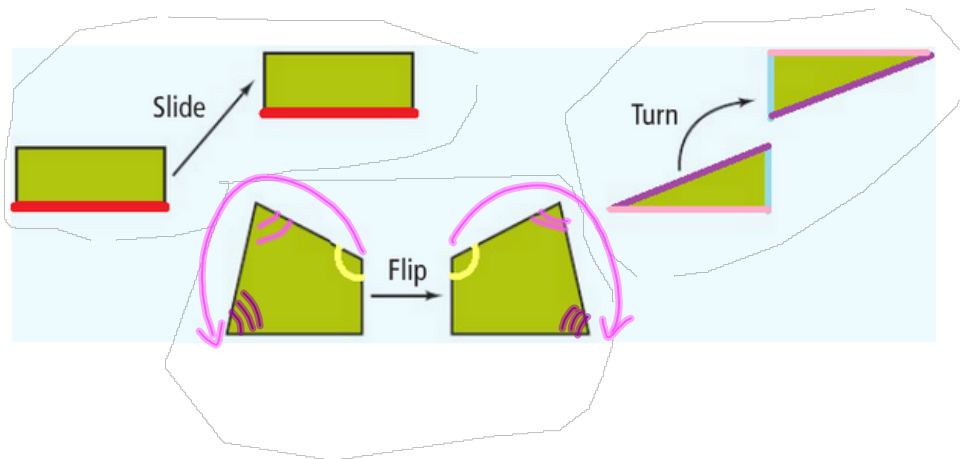
Polygons in which all corresponding parts are congruent (angles and sides).

Congruence
Statement

Statement that identifies shapes as congruent

$$\angle A \cong \angle Z, \overline{AB} \cong \overline{CD}$$

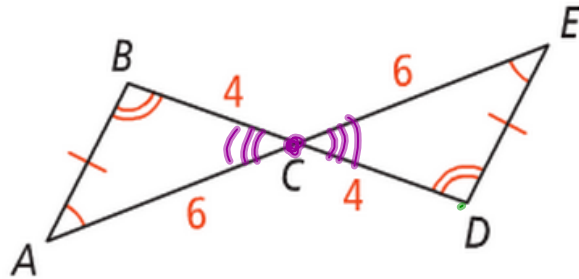
Sep 29-1:19 PM



Oct 2-8:11 PM

Write a congruence statement for the triangles and for each pair of corresponding parts

$$\begin{aligned} \angle B &\cong \angle D & \overline{AB} &\cong \overline{ED} \\ \angle A &\cong \angle E & \overline{AC} &\cong \overline{CE} \\ \angle BCA &= \angle ECD & \overline{BC} &\cong \overline{CD} \end{aligned}$$



$$\begin{aligned} \triangle ABC &\cong \triangle EDC \\ (\triangle CAB &\cong \triangle CED) \end{aligned}$$

May 13-10:02 PM

Using the given statement, write a congruence statement for each pair of corresponding parts

$$\triangle NBC \cong \triangle RAB$$

$$\begin{aligned} \angle N &\cong \angle R & \overline{NB} &\cong \overline{RA} \\ \angle NBC &\cong \angle A & \overline{BC} &\cong \overline{AB} \\ \angle C &\cong \angle ABR & \overline{CN} &\cong \overline{BR} \end{aligned}$$

$$\triangle SUPER \cong \triangle WOMAN$$

$$\begin{aligned} \angle S &\cong \angle W & \overline{SU} &\cong \overline{WO} \\ \angle U &\cong \angle O & \overline{PE} &\cong \overline{MA} \\ \angle P &\cong \angle M & \overline{ER} &\cong \overline{AN} \\ \angle E &\cong \angle A & \overline{UP} &\cong \overline{OM} \\ \angle R &\cong \angle N & \overline{SR} &\cong \overline{WN} \end{aligned}$$

Oct 11-8:24 PM

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

$\angle B \cong \angle D$ $\overline{AB} \cong \overline{CD}$
 $\angle BAC \cong \angle ACD$ $\overline{AD} \cong \overline{BC}$
 $\angle BCA \cong \angle DAC$ $\overline{AC} \cong \overline{AC}$

Oct 11-8:26 PM

take note **Theorem 4-1 Third Angles Theorem**

<p>Theorem If two angles of one triangle are congruent to two angles of another triangle, then the third angles are congruent.</p>	<p>If ... $\angle A \cong \angle D$ and $\angle B \cong \angle E$</p>	<p>Then ... $\angle C \cong \angle F$</p>
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Oct 11-8:33 PM

Statements	Reasons
$\angle A \cong \angle D, \angle B \cong \angle E$ $m\angle A + m\angle B + m\angle C = 180$ $m\angle D + m\angle E + m\angle F = 180$ $m\angle A + m\angle B + m\angle C = m\angle D + m\angle E + m\angle F$ $m\angle A = m\angle D, m\angle B = m\angle E$ $m\angle C = m\angle F$ $\angle C \cong \angle F$	<p>Given</p> <p>$\Delta \angle$ sum Thm</p> <p>Transitive Def. of \cong</p> <p>Subtraction Prop.</p> <p>Def. of \cong</p>

Oct 11-8:33 PM

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

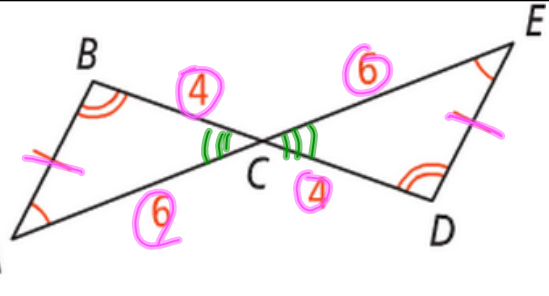
Prove: $\triangle LMN \cong \triangle LON$

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

Oct 11-8:37 PM

Prove: $\triangle ABC \cong \triangle EDC$

$\angle B \cong \angle D, \angle A \cong \angle E$ Given
 $\angle BCA \cong \angle ECD$ Vertical \angle s
 (or 3rd \angle s)



$\overline{AB} \cong \overline{ED}, \overline{BC} \cong \overline{CD}$
 $\overline{AC} \cong \overline{CE}$ Given

$\triangle ABC \cong \triangle EDC$ Def \cong \triangle s

Oct 11-8:40 PM

Homework

Pages 222-223

#8-20 even, 30, 31, 32, 39, 41

May 13-10:02 PM