

Grab a Week #9 Packet  
Bell Ringer

Tuesday 1/21

Find the measure of angle. Then classify the triangle by its angles.

Find the measure of the exterior angle.

Find the measure of each angle.

Jan 2-4:09 PM

Week #8 Packet due - hand in  
Ch 12 Quiz Thurs  
Ch 11 Test Retakes due Fri 1/31

Jan 4-10:35 PM

**Essential Question**

How can you prove two triangles are congruent?

Essential Question

**Theorem**

**Side-Angle-Side (SAS) Congruence Theorem**

If two sides and the included angle of one triangle are congruent to two sides and the included angle of a second triangle, then the two triangles are congruent.

If  $\overline{AB} \cong \overline{DE}$ ,  $\angle A \cong \angle D$ , and  $\overline{AC} \cong \overline{DF}$ , then  $\triangle ABC \cong \triangle DEF$ .

*Proof p. 602*

Theorem

Use SAS only when the angle is right between the two marked sides....

S  
A  
S

Jan 4-10:45 PM

Which pairs of triangles are congruent by SAS??

Jan 4-10:42 PM

Given	Statement	Reason
$\overline{BC} \cong \overline{DA}$ , $\overline{BC} \parallel \overline{AD}$ Prove $\triangle ABC \cong \triangle CDA$	$\overline{BC} \cong \overline{DA}$ * $\overline{BC} \parallel \overline{AD}$ $\angle CAD \cong \angle BCA$ $\overline{AC} \cong \overline{AC}$ $\triangle ABC \cong \triangle CDA$	①. Given ②. Alt. Int. angles ③. Reflexive P. ④. SAS Cong. Thm

Example 1

In the diagram,  $\overline{QS}$  and  $\overline{RP}$  pass through the center  $M$  of the circle. What can you conclude about  $\triangle MRS$  and  $\triangle MPQ$ ?

Example 2

Given	Statement	Reason
Given: $ABCD$ is a square. $R, S, T, U$ are the midpoints of $AB, BC, CD, DA$ . $\overline{RT} \perp \overline{SU}$ and $\overline{SV} \cong \overline{VU}$ . Prove: $\triangle SVR \cong \triangle UVR$	$\overline{RT} \perp \overline{SU}$ $\overline{SV} \cong \overline{VU}$ $\overline{RV} \cong \overline{RV}$ $\angle SVR$ & $\angle UVR$ are $90^\circ$ $\triangle SVR \cong \triangle UVR$	①. Given ②. Reflexive P. ③. Def. of $\perp$ ④. SAS Cong. Thm

Monitoring Progress 1-2

You are making a canvas sign to hang on the triangular portion of the barn wall shown in the picture. You think you can use two identical triangular sheets of canvas. You know that  $\overline{RP} \perp \overline{QS}$  and  $\overline{PQ} \cong \overline{PS}$ . Use the SAS Congruence Theorem to show that  $\triangle PQR \cong \triangle PSR$ .

Statement	Reason
$\overline{RP} \perp \overline{QS}$ $\overline{PQ} \cong \overline{PS}$	①. Given
$\angle QPR$ & $\angle SPR$ are $90^\circ$	②. Def. of $\perp$
$\overline{RP} \cong \overline{RP}$	③. Reflexive P.
$\triangle PQR \cong \triangle PSR$	④. SAS Cong. Thm.

Example 3

You are designing the window shown below. You want to make  $\triangle DRA$  congruent to  $\triangle DRG$ . You design the window so that  $\overline{DA} \cong \overline{DG}$  and  $\angle ADR \cong \angle GDR$ . Use the SAS Congruence Theorem to prove  $\triangle DRA \cong \triangle DRG$ .

Monitoring Progress 3

due Thursday

12.3 online hw

Pg 605-606 #s 1, 2, 3-21 odd, 25, 26, 30, 32-35