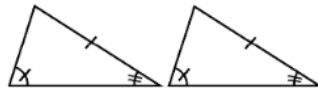


Name: \_\_\_\_\_  
Homework **06-05**

Questions 1 through 4 refer to the following:

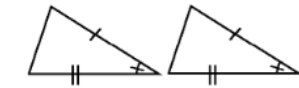
What is the congruence correspondence, if any, that will prove the given triangles congruent?

**B** 1)



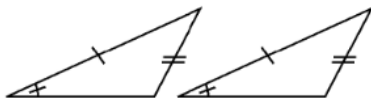
- A) SAS  
B) AAS  
C) SSA  
D) none

**A** 2)



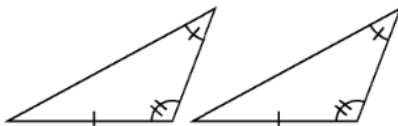
- A) SAS  
B) AAS  
C) ASA  
D) none

**D** 3)



- A) AAS  
B) SSA  
C) SAS  
D) none

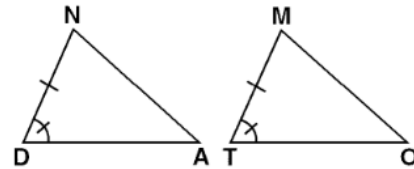
**B** 4)



- A) SAS  
B) AAS  
C) ASA  
D) none

**A** 5)

The pair of triangles below have two corresponding parts marked as congruent.

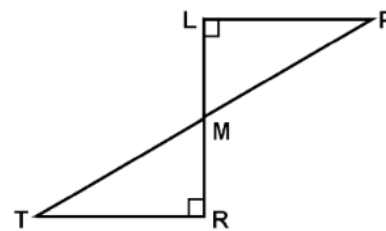


What additional information is needed for an AAS congruence correspondence?

- A)  $\angle A \cong \angle O$   
B)  $\overline{NA} \cong \overline{MO}$   
C)  $\angle O \cong \angle N$   
D)  $\angle A \cong \angle M$

**C** 6)

In the accompanying diagram,  $\overline{RL} \perp \overline{LP}$ ,  $\overline{LR} \perp \overline{RT}$ , and M is the midpoint of  $\overline{TP}$ .



Which method could be used to prove  $\triangle TMR \cong \triangle PML$ ?

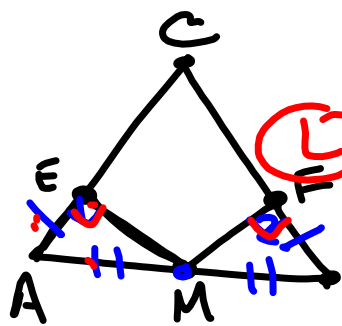
- A)  $\overline{HL} \cong \overline{HL}$   
B)  $\overline{SAS} \cong \overline{SAS}$   
C)  $\overline{AAS} \cong \overline{AAS}$   
D)  $\overline{SSS} \cong \overline{SSS}$

**A** 7)

Which condition does *not* prove that two triangles are congruent?

- A)  $\overline{SSA} \cong \overline{SSA}$   
B)  $\overline{SSS} \cong \overline{SSS}$   
C)  $\overline{SAS} \cong \overline{SAS}$   
D)  $\overline{ASA} \cong \overline{ASA}$

## Warm-up: pg 22 Example 5



1.  $\overline{EM} \perp \overline{AC}$   
 $\overline{FM} \perp \overline{BC}$   
 $\overline{EA} \cong \overline{FB}$   
 M is the mdpt of  $\overline{AB}$

1. Given

(H) 2.  $\overline{AM} \cong \overline{BM}$  2. mdpt  $\rightarrow 2 \cong$  segs

3.  $\angle 1$  &  $\angle 2$  are  $\angle$ 's  
 $\angle$ 's

✓ 4.  $\angle 1 \cong \angle 2$  (4)  $\angle$ 's are  $\cong$

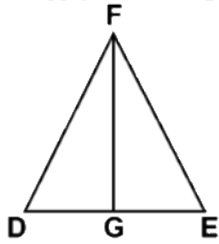
(4)  $\triangle EMA$  &  $\triangle FMB$  are  $\text{Rt. } \triangle$ 's (4) A  $\triangle$  with  
 1  $\text{Rt. } \angle$  is

(5)  $\triangle EMA \cong \triangle FMB$  (5) a  $\text{Rt. } \triangle$   
 $\text{H.C.} \cong \text{H.C.}$

Please rip out the regents  
practice questions and staple  
them to the back of your quiz  
and turn into the folder!

Do you use an agenda?

- 8) Supply the missing reason(s) for the given proof.

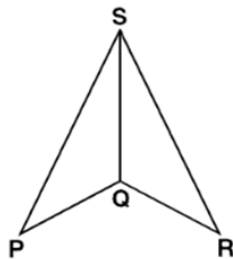


Given:  $\overline{FG} \perp \overline{DE}$   
 G is midpoint of  $\overline{DE}$ .

Prove:  $\triangle DFG \cong \triangle EFG$

STATEMENTS	REASONS
(1) $\overline{FG} \perp \overline{DE}$ G is midpoint of $\overline{DE}$ .	(1) <b>given</b>
(2) $\overline{DG} \cong \overline{GE}$	(2) <b>A pt is a midpt iff it <math>\div</math>s a sgmt into 2 <math>\cong</math> sgmts.</b>
(3) $\angle DGF$ and $\angle EGF$ are right angles.	(3) <b>2 lines are <math>\perp</math> iff they intersect to form rt. <math>\angle</math>'s.</b>
(4) $\angle DGF \cong \angle EGF$	(4) <b>All rt <math>\angle</math>'s are <math>\cong</math></b>
(5) $\overline{FG} \cong \overline{FG}$	(5) <b>Reflexive</b>
(6) $\triangle DFG \cong \triangle EFG$	(6) <b>SAS <math>\cong</math> SAS</b>

- 9)

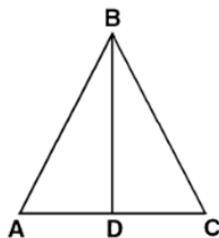


Given:  $\overline{SQ}$  bisects  $\angle PSR$   
 $\angle P \cong \angle R$

Prove:  $\triangle PQS \cong \triangle RQS$

Statements	Reasons
1. $\overline{SQ}$ bisects $\angle PSR$ $\angle P \cong \angle R$	1. Given
2. $\overline{SQ} \cong \overline{SQ}$	2. Reflexive
3. $\angle PSQ \cong \angle RSQ$	3. A ray bisects an $\angle$ iff it divides it into 2 congruent $\angle$ 's.
4. $\triangle PQS \cong \triangle RQS$	4. AAS $\cong$ AAS

- 10)



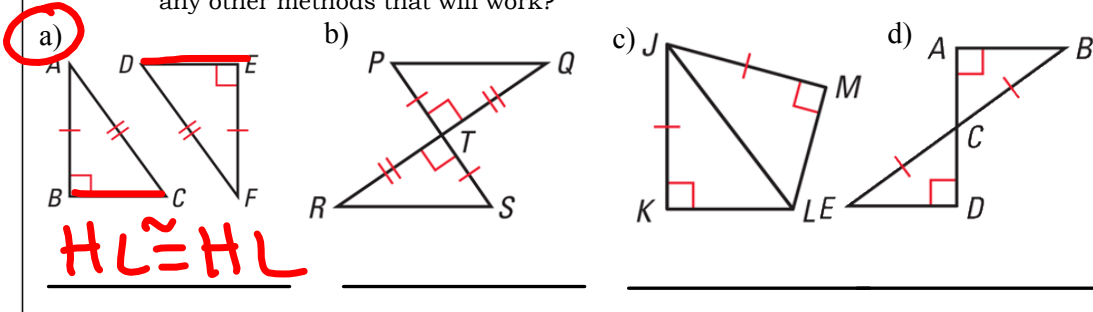
Given:  $\overline{BD} \perp \overline{AC}$   
 $\overline{AB} \cong \overline{BC}$

Prove:  $\triangle ABD \cong \triangle CBD$

Statements	Reasons
1. $\overline{BD} \perp \overline{AC}$ $\overline{AB} \cong \overline{BC}$	1. given
2. $\angle ADB$ & $\angle CDB$ are rt $\angle$ 's.	2. 2 lines are $\perp$ iff they intersect to form rt $\angle$ 's.
3. $\triangle ADB$ & $\triangle CBD$ are rt $\triangle$ 's.	3. A $\triangle$ is a rt $\triangle$ iff it has 1 rt $\angle$ .
4. $\overline{BD} \cong \overline{BD}$	4. Reflexive
5. $\triangle ABD \cong \triangle CBD$	5. HL $\cong$ HL

**Lesson 6: Corresponding Parts of Congruent Triangles are Congruent (CPCTC)**

Warm up: Which pairs of triangles can be proven congruent using HL? Are there any other methods that will work?

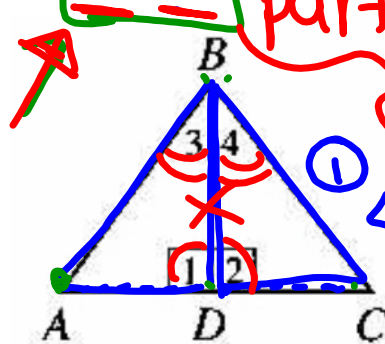


Recall that when two triangles are congruent, ALL of their corresponding sides are congruent and ALL of their corresponding angles are congruent. Thus, to prove that two line segments are congruent or two angles are congruent....

1. Choose two triangles that contain the segments or the angles that are to be proved congruent.
2. Prove the chosen triangles are congruent
3. Show that the segments or angles that are to be proved congruent are corresponding parts of congruent triangles and are therefore congruent themselves.

Ex 1: Given:  $\angle 1 \cong \angle 2$  and  $\angle 3 \cong \angle 4$

Prove:  $\overline{AD} \cong \overline{CD}$



part  $\cong$  part  
CPCTC

CPCTC

$\angle 1 \cong \angle 2$  (A)  
 $\angle 3 \cong \angle 4$  (A)

1. Given

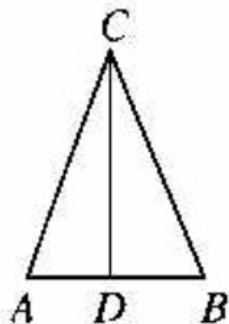
2.  $\overline{BD} \cong \overline{BD}$  (A) 2. Reflexive

3.  $\triangle ABD \cong \triangle CBD$  3. ASA  $\cong$  ASA

4.  $\overline{AD} \cong \overline{CD}$  4. CPCTC

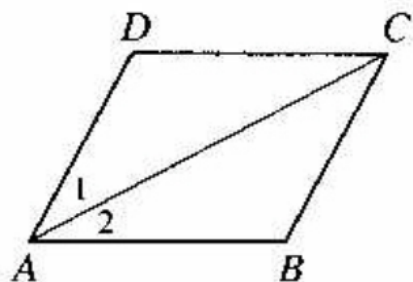
Ex 2: Given:  $\overline{CA} \cong \overline{CB}$  and  $\overline{AD} \cong \overline{BD}$

Prove:  $\angle A \cong \angle B$

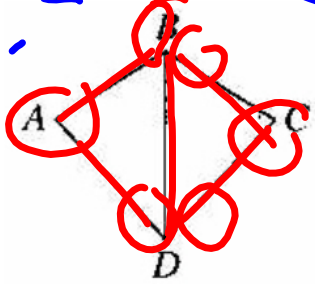


Ex 3: Given:  $\overline{AD} \cong \overline{AB}$  and  $\angle 1 \cong \angle 2$

Prove:  $\overline{CB} \cong \overline{CD}$

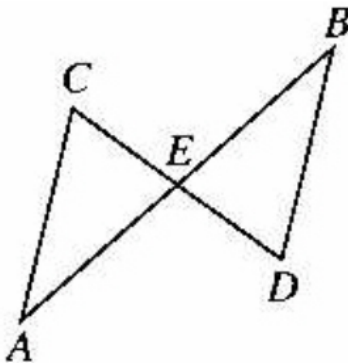


Ex 4: Given:  $\overline{BD}$  bisects  $\angle ABC$  and  $\overline{DB}$  bisects  $\angle ADC$   
 Prove:  $\angle A \cong \angle C$



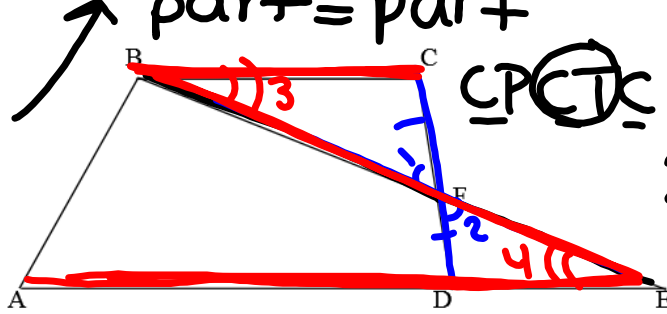
S	R
1.	1. Given
2. $\angle 1 \cong \angle 2$ (A) $\angle 3 \cong \angle 4$ (A)	2. $\angle$ bis. $\div$ 's an $\angle$ into 2 $\cong$ $\angle$ 's
3. $\overline{BD} \cong \overline{BD}$ (S)	3. Reflexive
4. $\triangle ABD \cong \triangle CBD$	4. ASA $\cong$ ASA
5. $\angle A \cong \angle C$	5. CPCTC

Ex 5: Given:  $\overline{AB}$  and  $\overline{CD}$  bisect each other at E  
 Prove:  $\angle C \cong \angle D$



Example 6:

Given: Quadrilateral ABCD, BFE, CFD, ADE BE bisects CD, AE // BC

Prove:  $\overline{BF} \cong \overline{FE}$ 

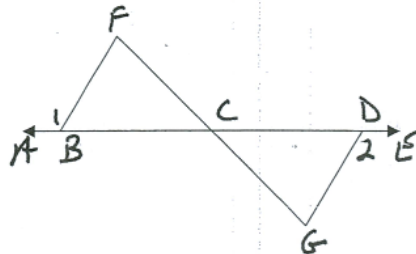
2.  $\overline{CF} \cong \overline{DF}$  (S) 2. A seg. bis  
is a seg  
into 2  $\cong$   
seg's
3.  $\angle 1 \cong \angle 2$  (A) 3. Vert.  $\angle$ 's  
are  $\cong$
4.  $\angle 3 \cong \angle 4$  (A) 4.  $// \rightarrow \cong$   
alt. int  $\angle$ 's



Proving Congruent Triangles  
More Examples

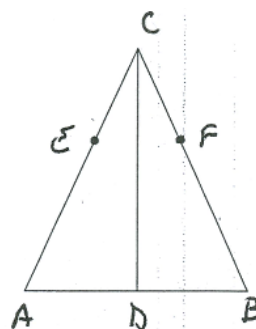
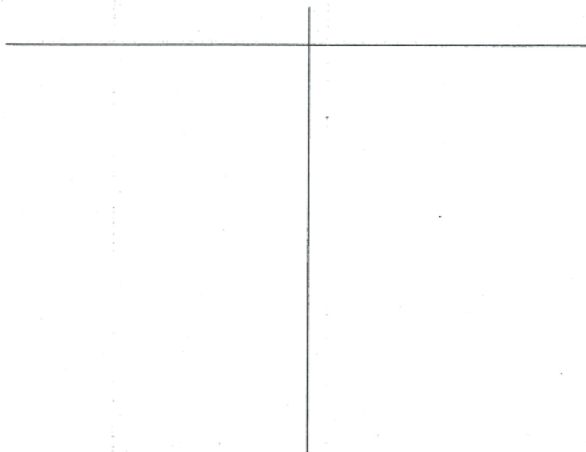
Complete a formal proof for each of the following.

1. Given:  $\overleftrightarrow{ABCE}$  and  $\overleftrightarrow{FCG}$ ,  $C$  is midpoint of  $\overline{BD}$ ,  
 $\angle 1 \cong \angle 2$   
Prove:  $\triangle BFC \cong \triangle DGC$



3. Given: In  $\triangle ABC$ ,  $\overline{CD}$  is a median to  $\overline{AB}$ ,  
 $\overline{CE} \cong \overline{CF}$ ,  $\overline{EA} \cong \overline{FB}$ .

Prove:  $\triangle ACD \cong \triangle BCD$



4. Given:  $\overrightarrow{MS}$  is  $\perp$  bis. of  $\overline{LP}$ ,  $\overline{RM} \cong \overline{QM}$ ,  $\angle a \cong \angle b$   
Prove:  $\triangle RLM \cong \triangle QPM$

