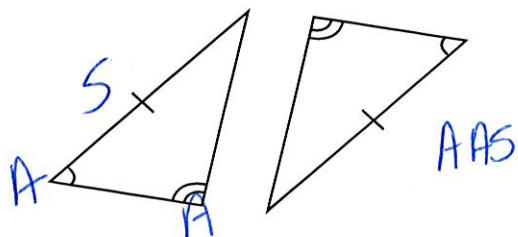


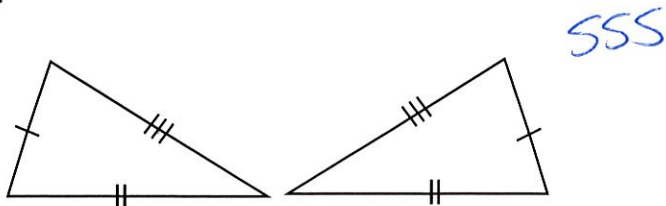
Triangle Congruence Theorems KEY

For each, state whether the triangles are congruent by A: SSS, B: SAS, C: ASA (AAS), or D: HL and bubble your answer below.

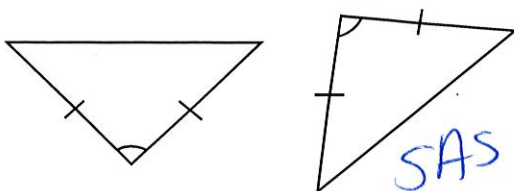
1.



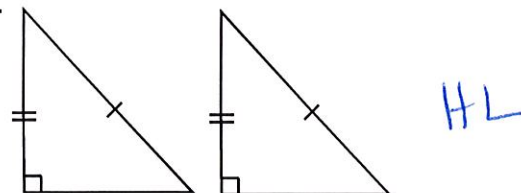
2.



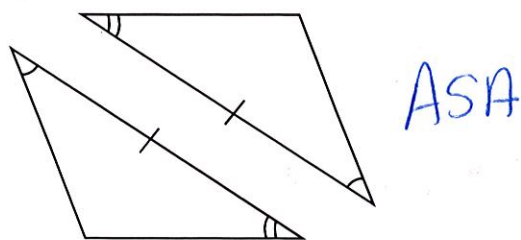
3.



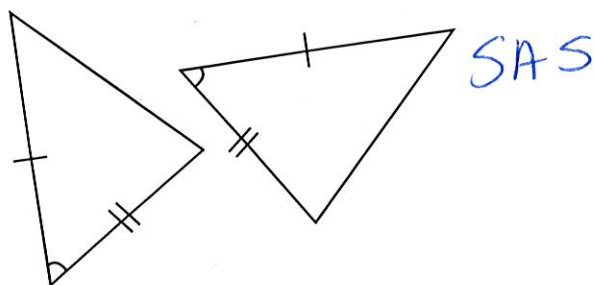
4.



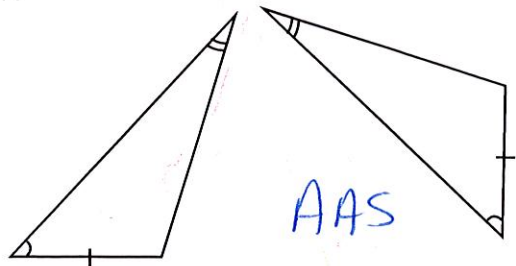
5.



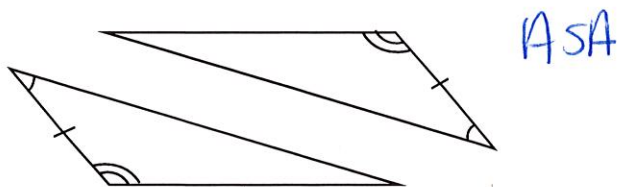
6.



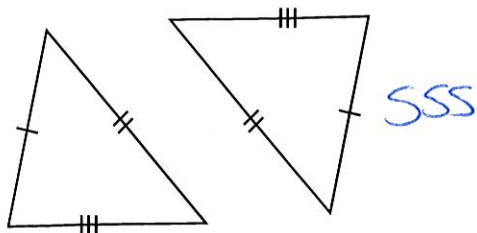
7.



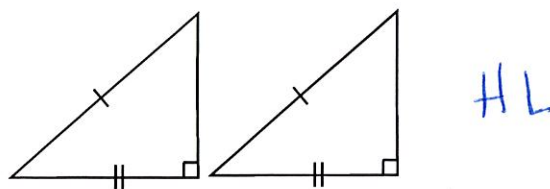
8.



9.



10.

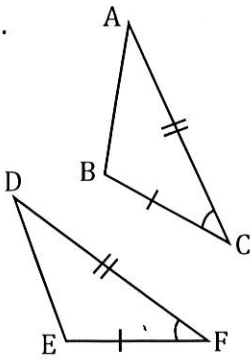


Bubble the correct answer choice from each item above.

#1.	#2.	#3.	#4.	#5.	#6.	#7.	#8.	#9.	#10.
<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.
<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.
<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.
<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.

List all the congruent parts. Then state whether the triangles are congruent by A: SSS, B: SAS, C: ASA (AAS), or D: HL and bubble your answer.

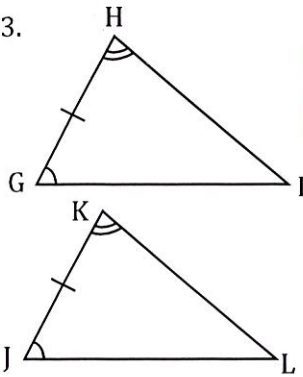
1.



$\overline{BC} \cong \overline{EF}$ given
 $\angle C \cong \angle F$ given
 $\overline{AC} \cong \overline{DF}$ given

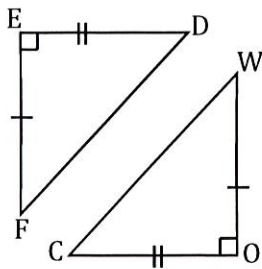
So $\triangle ABC \cong \triangle DEF$
 by SAS.

3.



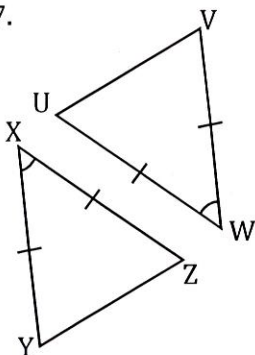
ASA
 $\triangle HGI \cong \triangle KJL$

5.



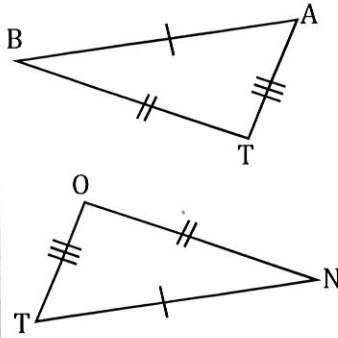
SAS
 $\triangle DEF \cong \triangle COW$

7.



SAS
 $\triangle VWU \cong \triangle YXZ$

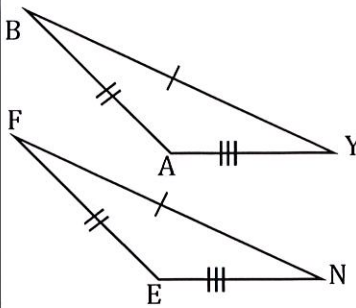
2.



SSS

$\triangle ABT \cong \triangle TNO$

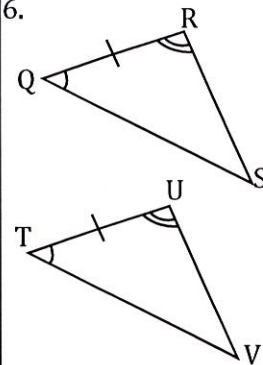
4.



SSS

$\triangle BYA \cong \triangle ENF$

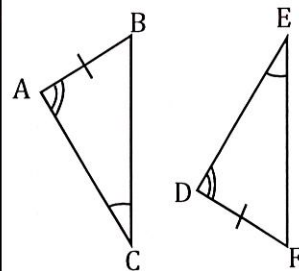
6.



ASA

$\triangle QRS \cong \triangle TVU$

8.



AAS

$\triangle ABC \cong \triangle DEF$

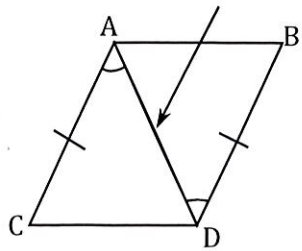
Bubble the correct answer choice from each item above.

#1.	#2.	#3.	#4.	#5.	#6.	#7.	#8.
<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.
<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.
<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.
<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.

On some of these, you might need to find some hidden congruent parts. Also...some are not necessarily congruent. If they aren't, don't bubble anything. The first two are examples. Give it a go.

9.

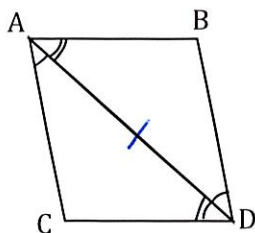
Shared Line



$\overline{CA} \cong \overline{BD}$ given
 $\angle CAD \cong \angle ADB$ given
 $\overline{AD} \cong \overline{AD}$ shared line

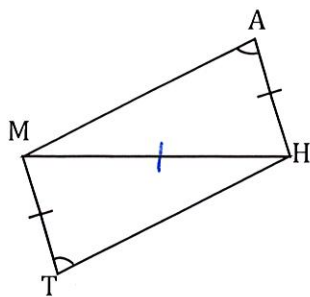
So $\triangle CAD \cong \triangle BDA$
 by SAS.

11.



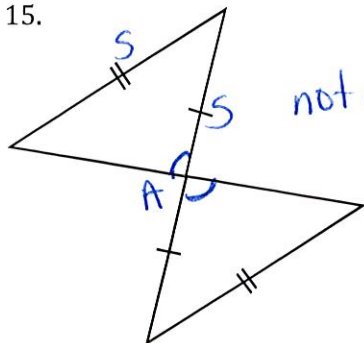
ASA
 $\triangle ABD \cong \triangle DCA$

13.



Not congruent

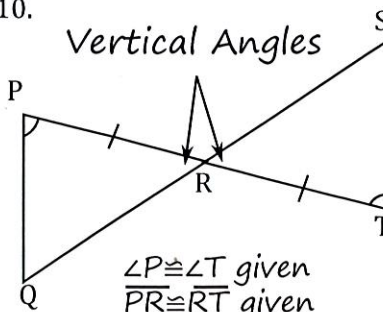
15.



not congruent

10.

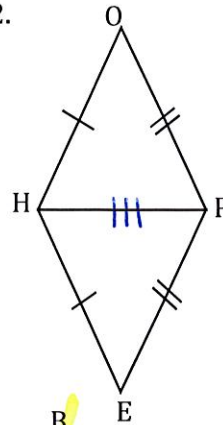
Vertical Angles



$\angle P \cong \angle T$ given
 $\overline{PR} \cong \overline{TR}$ given
 $\angle PRQ \cong \angle SRT$ vertical

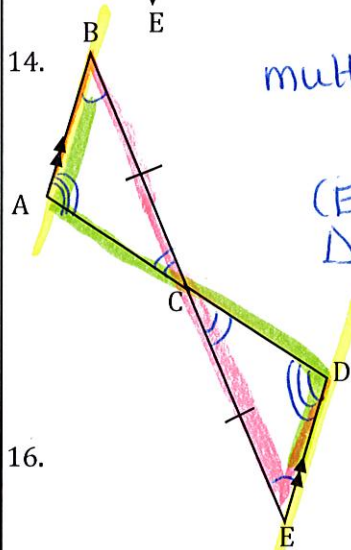
So $\triangle PQR \cong \triangle TSR$
 by ASA.

12.



SSS $\triangle HOP \cong \triangle HEP$

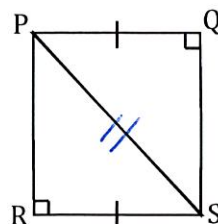
14.



multiple ways (2)

AAS or ASA
 (Either one is correct)
 $\triangle ABC \cong \triangle DEC$

16.

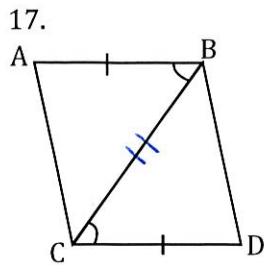


alt. interior $\angle B = \angle E$
 $\angle A \cong \angle D$

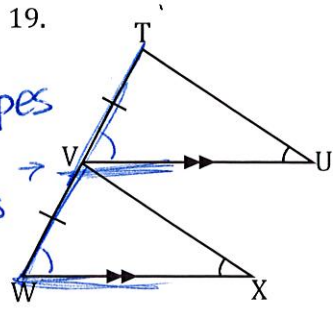
HL $\triangle PQS \cong \triangle SRP$

Bubble the correct answer choice from each item above.

#9	#10	#11	#12	#13	#14	#15	#16
<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.
<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.
<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.
<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.

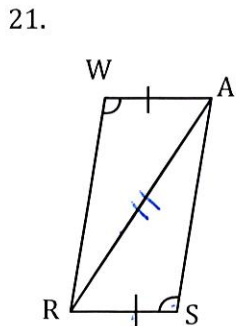


SAS
 $\triangle ABC \cong \triangle DCB$

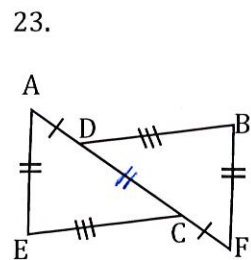


"F"-shapes
 Corresp. angles
 are
 \cong .

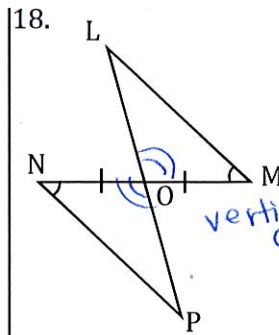
ASA
 $\triangle TUV \cong \triangle VWX$



not congruent



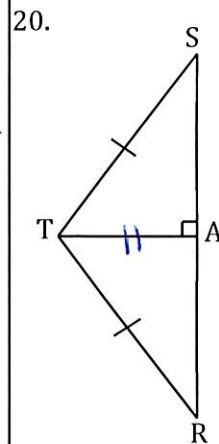
SSS
 $\triangle ACE \cong \triangle FDB$



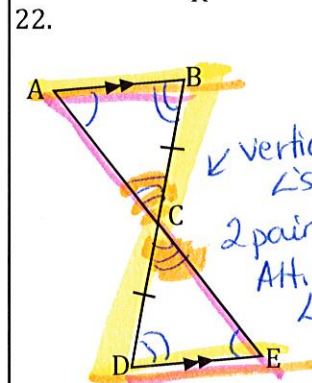
ASA

$\triangle LMO \cong \triangle PNO$

vertical angles

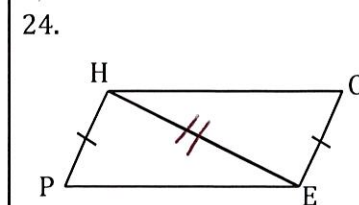


HL $\triangle STA \cong \triangle TRA$
 $\triangle TAS \cong \triangle TAR$



2 ways:
 AAS or ASA

$\triangle ABC \cong \triangle EDC$

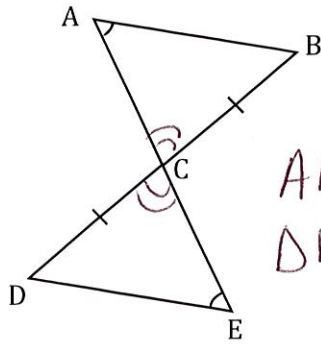


not congruent

Bubble the correct answer choice from each item above.

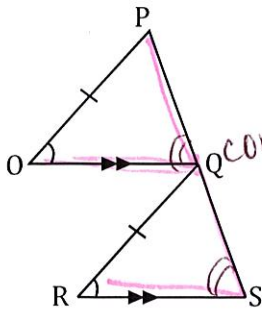
#17	#18	#19	#20	#21	#22	#23	#24
<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.
<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.
<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.
<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.

25.



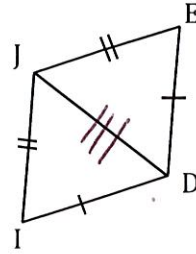
AAS
 $\triangle ABC \cong \triangle EDC$

27.



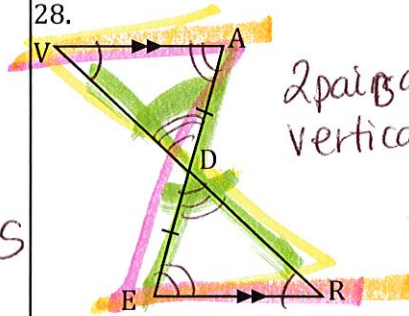
AAS
 corresponding angle
 $\triangle POQ \cong \triangle QRS$

26.



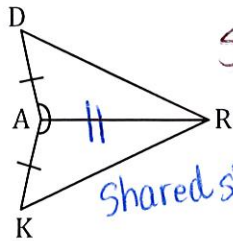
SSS
 $\triangle EDJ \cong \triangle IDJ$

28.



2 pairs alt. int. vertical angles
 AAS or ASA
 $\triangle ADV \cong \triangle EDR$

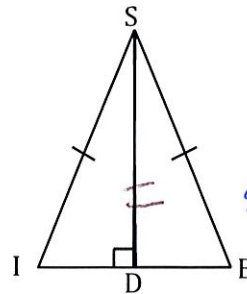
29.



SAS
 $\triangle DAR \cong \triangle KAR$

shared side

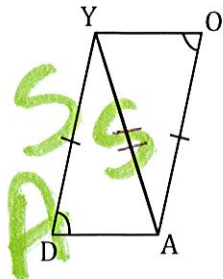
30.



HL
 $\triangle SDI \cong \triangle SDE$

shared side

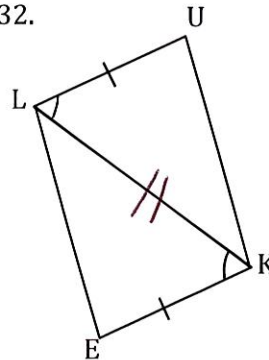
31.



not congruent

SSA

32.



SAS
 $\triangle ULK \cong \triangle EKL$

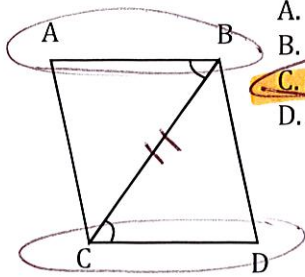
shared side.

Bubble the correct answer choice from each item above.

#25	#26	#27	#28	#29	#30	#31	#32
<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.
<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.
<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.
<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.

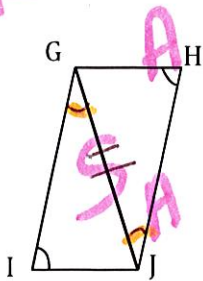
What additional information is needed to show the triangles are congruent by the given property?

1. SAS



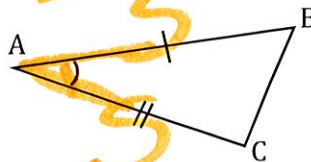
- A. $\overline{AC} \cong \overline{CD}$
- B. $\angle A \cong \angle D$
- C. $\overline{AB} \cong \overline{CD}$
- D. $\angle ABC \cong \angle DCB$

3. AAS

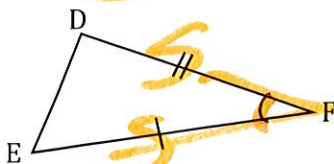


- A. $\angle IGJ \cong \angle HGI$
- B. $\overline{IG} \cong \overline{HJ}$
- C. $\angle IGJ \cong \angle HJG$
- D. $\angle HJG \cong \angle HGJ$

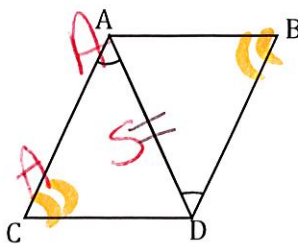
5. SAS



- A. $\angle A \cong \angle E$
- B. $\angle C \cong \angle D$
- C. $\angle B \cong \angle E$
- D. $\angle A \cong \angle F$

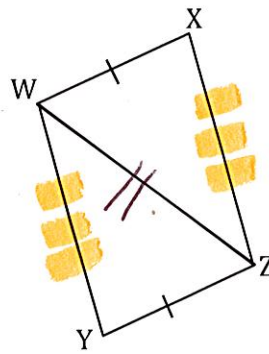


7. AAS



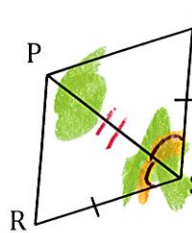
- A. $\angle C \cong \angle B$
- B. $\overline{CD} \cong \overline{AB}$
- C. $\angle BAD \cong \angle ABD$
- D. $\angle C \cong \angle BDA$

2. SSS



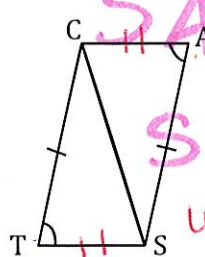
- A. $\overline{XZ} \cong \overline{YX}$
- B. $\angle X \cong \angle Y$
- C. $\overline{YZ} \cong \overline{XZ}$
- D. $\overline{WZ} \cong \overline{XZ}$

4. SAS



- A. $\angle QPS \cong \angle SQP$
- B. $\angle QSP \cong \angle RSP$
- C. $\angle QSP \cong \angle RPS$
- D. $\angle R \cong \angle Q$

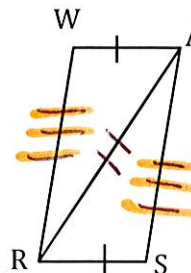
6. SAS



- A. Nothing
- B. $\angle TCS \cong \angle ACS$
- C. $\angle A \cong \angle T$
- D. $\angle TSC \cong \angle ACS$

Answer not given
would need
 $\overline{AC} \cong \overline{ST}$

8. SSS



- A. $\overline{WR} \cong \overline{AR}$
- B. $\overline{AS} \cong \overline{AR}$
- C. $\overline{WR} \cong \overline{AS}$
- D. $\angle RAS \cong \angle ARW$

W

Bubble the correct answer choice from each item above.

#1	#2	#3	#4	#5	#6	#7	#8
<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.	<input type="radio"/> A.
<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.	<input type="radio"/> B.
<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.	<input type="radio"/> C.
<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.	<input type="radio"/> D.