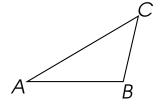
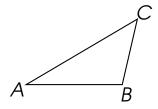
### SAS Triangle Congruence Postulate

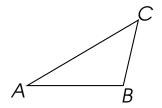
Jonathan R. Bacolod

Sauyo High School

Included angle: the angle between two sides of a triangle Included side: the side common to two angles of a triangle

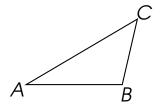






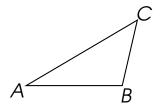
In  $\triangle ABC$ ,

1. The included angle between  $\overline{AB}$  and  $\overline{AC}$  is

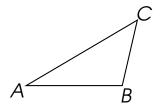


In  $\triangle ABC$ ,

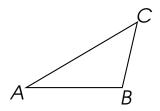
1. The included angle between AB and  $\overline{AC}$  is  $\angle A$ .



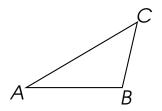
- 1. The included angle between  $\overline{AB}$  and  $\overline{AC}$  is  $\angle A$ .
- 2. The included angle between AB and  $\overline{BC}$  is



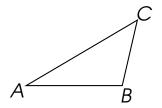
- 1. The included angle between AB and  $\overline{AC}$  is  $\angle A$ .
- 2. The included angle between AB and  $\overline{BC}$  is  $\angle B$ .



- 1. The included angle between  $\overline{AB}$  and  $\overline{AC}$  is  $\angle A$ .
- 2. The included angle between  $\overline{AB}$  and  $\overline{BC}$  is  $\angle B$ .
- 3. The included angle between  $\overline{AC}$  and  $\overline{BC}$  is

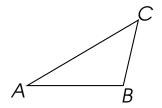


- 1. The included angle between  $\overline{AB}$  and  $\overline{AC}$  is  $\angle A$ .
- 2. The included angle between  $\overline{AB}$  and  $\overline{BC}$  is  $\angle B$ .
- 3. The included angle between  $\overline{AC}$  and  $\overline{BC}$  is  $\angle C$ .



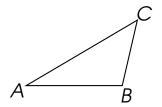
In  $\triangle ABC$ ,

4. The included side between  $\angle A$  and  $\angle B$  is

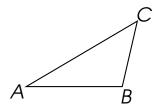


In  $\triangle ABC$ ,

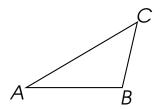
4. The included side between  $\angle A$  and  $\angle B$  is  $\overline{AB}$ .



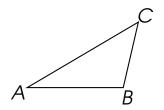
- 4. The included side between  $\angle A$  and  $\angle B$  is  $\overline{AB}$ .
- 5. The included side between  $\angle A$  and  $\angle C$  is



- 4. The included side between  $\angle A$  and  $\angle B$  is  $\overline{AB}$ .
- 5. The included side between  $\angle A$  and  $\angle C$  is  $\overline{AC}$ .



- 4. The included side between  $\angle A$  and  $\angle B$  is  $\overline{AB}$ .
- 5. The included side between  $\angle A$  and  $\angle C$  is  $\overline{AC}$ .
- 6. The included side between  $\angle B$  and  $\angle C$  is



- 4. The included side between  $\angle A$  and  $\angle B$  is  $\overline{AB}$ .
- 5. The included side between  $\angle A$  and  $\angle C$  is  $\overline{AC}$ .
- 6. The included side between  $\angle B$  and  $\angle C$  is  $\overline{BC}$ .

In  $\triangle NOD$ ,

1. The included angle between  $\overline{NO}$  and  $\overline{OD}$  is

In  $\triangle NOD$ ,

1. The included angle between  $\overline{NO}$  and  $\overline{OD}$  is  $\angle O$ .

- 1. The included angle between NO and  $\overline{OD}$  is  $\angle O$ .
- 2. The included angle between  $\overline{NO}$  and  $\overline{ND}$  is

- 1. The included angle between NO and  $\overline{OD}$  is  $\angle O$ .
- 2. The included angle between  $\overline{NO}$  and  $\overline{ND}$  is  $\angle N$ .

- 1. The included angle between  $\overline{NO}$  and  $\overline{OD}$  is  $\angle O$ .
- 2. The included angle between  $\overline{NO}$  and  $\overline{ND}$  is  $\angle N$ .
- The included angle between OD and ND is

- 1. The included angle between  $\overline{NO}$  and  $\overline{OD}$  is  $\angle O$ .
- 2. The included angle between  $\overline{NO}$  and  $\overline{ND}$  is  $\angle N$ .
- 3. The included angle between  $\overline{OD}$  and  $\overline{ND}$  is  $\angle D$ .

- 1. The included angle between  $\overline{NO}$  and  $\overline{OD}$  is  $\angle O$ .
- 2. The included angle between  $\overline{NO}$  and  $\overline{ND}$  is  $\angle N$ .
- 3. The included angle between  $\overline{OD}$  and  $\overline{ND}$  is  $\angle D$ .
- 4. The included side between  $\angle N$  and  $\angle O$  is

- 1. The included angle between  $\overline{NO}$  and  $\overline{OD}$  is  $\angle O$ .
- 2. The included angle between  $\overline{NO}$  and  $\overline{ND}$  is  $\angle N$ .
- 3. The included angle between  $\overline{OD}$  and  $\overline{ND}$  is  $\angle D$ .
- 4. The included side between  $\angle N$  and  $\angle O$  is  $\overline{NO}$ .

- 1. The included angle between  $\overline{NO}$  and  $\overline{OD}$  is  $\angle O$ .
- 2. The included angle between  $\overline{NO}$  and  $\overline{ND}$  is  $\angle N$ .
- 3. The included angle between  $\overline{OD}$  and  $\overline{ND}$  is  $\angle D$ .
- 4. The included side between  $\angle N$  and  $\angle O$  is  $\overline{NO}$ .
- 5. The included side between  $\angle N$  and  $\angle D$  is

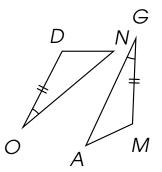
- 1. The included angle between  $\overline{NO}$  and  $\overline{OD}$  is  $\angle O$ .
- 2. The included angle between  $\overline{NO}$  and  $\overline{ND}$  is  $\angle N$ .
- 3. The included angle between  $\overline{OD}$  and  $\overline{ND}$  is  $\angle D$ .
- 4. The included side between  $\angle N$  and  $\angle O$  is  $\overline{NO}$ .
- 5. The included side between  $\angle N$  and  $\angle D$  is  $\overline{ND}$ .

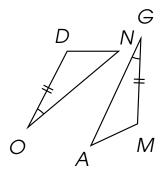
- 1. The included angle between  $\overline{NO}$  and  $\overline{OD}$  is  $\angle O$ .
- 2. The included angle between  $\overline{NO}$  and  $\overline{ND}$  is  $\angle N$ .
- 3. The included angle between *OD* and  $\overline{ND}$  is  $\angle D$ .
- 4. The included side between  $\angle N$  and  $\angle O$  is  $\overline{NO}$ .
- 5. The included side between  $\angle N$  and  $\angle D$  is  $\overline{ND}$ .
- The included side between ∠O and ∠D is

- 1. The included angle between  $\overline{NO}$  and  $\overline{OD}$  is  $\angle O$ .
- 2. The included angle between  $\overline{NO}$  and  $\overline{ND}$  is  $\angle N$ .
- 3. The included angle between *OD* and  $\overline{ND}$  is  $\angle D$ .
- 4. The included side between  $\angle N$  and  $\angle O$  is  $\overline{NO}$ .
- 5. The included side between  $\angle N$  and  $\angle D$  is  $\overline{ND}$ .
- 6. The included side between  $\angle O$  and  $\angle D$  is  $\overline{OD}$ .

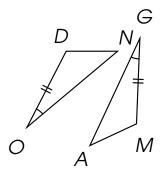
### SAS (Side-Angle-Side) Congruence Postulate

If the two sides and an included angle of one triangle are congruent to the corresponding two sides and the included angle of another triangle, then the triangles are congruent.

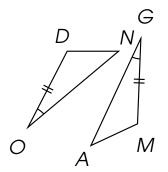




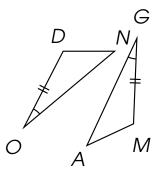




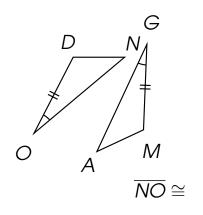
$$\overline{DO}\cong\overline{MG}$$



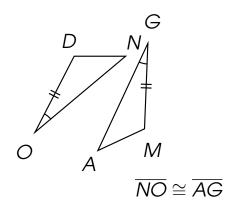
$$\overline{DO}\cong\overline{MG}$$
 $\angle O\cong$ 



$$\overline{DO} \cong \overline{MG}$$
 $\angle O \cong \angle G$ 

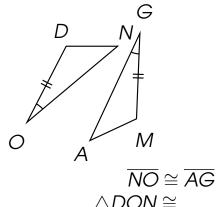


$$\overline{DO} \cong \overline{MG}$$
 $\angle O \cong \angle G$ 

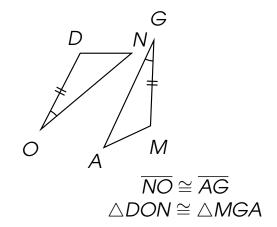


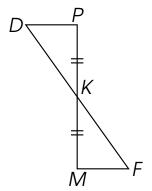
$$\overline{DO} \cong \overline{MG}$$
 $\angle O \cong \angle G$ 

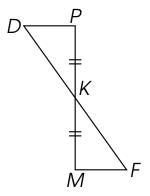




$$\overline{DO} \cong \overline{MG}$$
 $\angle O \cong \angle G$ 

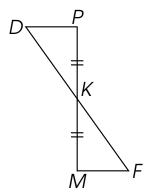




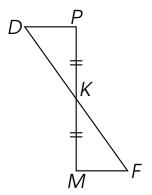




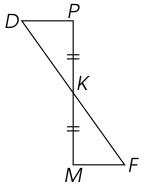
Complete the statements using the SAS congruence postulate.



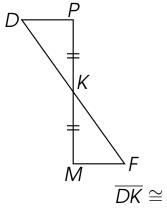
 $\overline{PK}\cong\overline{MK}$ 



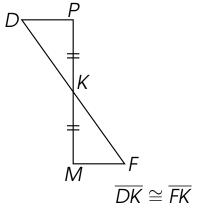
$$\overline{PK} \cong \overline{MK}$$
 $\angle DKP \cong$ 

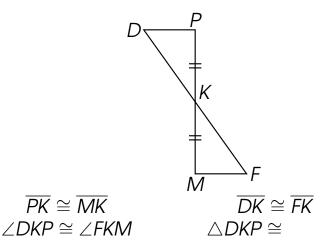


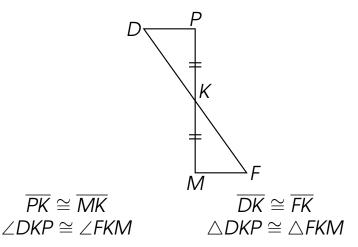
$$\overline{PK} \cong \overline{MK}$$
 $\angle DKP \cong \angle FKM$ 

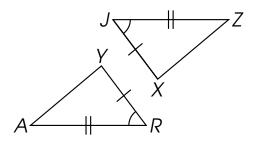


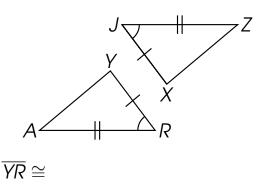
$$\overline{PK} \cong \overline{MK}$$
 $\angle DKP \cong \angle FKM$ 

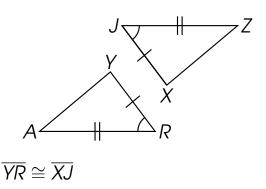


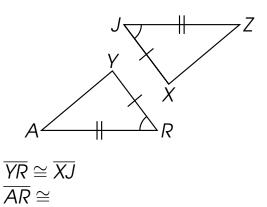


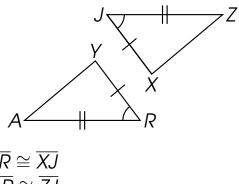




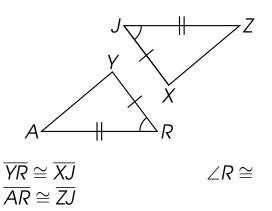


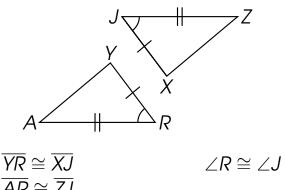


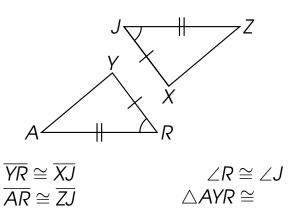


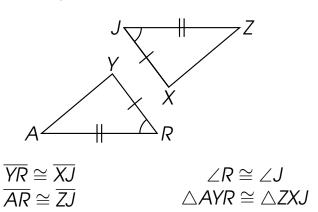


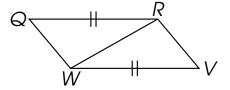
$$\overline{YR} \cong \overline{XJ}$$
 $\overline{AR} \cong \overline{ZJ}$ 

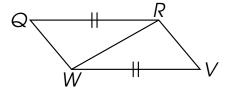




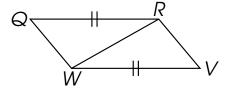




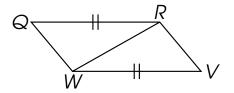




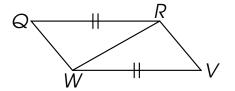
$$\overline{RW}\cong$$



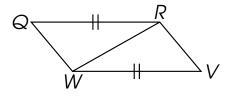
$$\overline{RW}\cong\overline{WR}$$



$$\frac{\overline{RW}\cong\overline{WR}}{\overline{RQ}\cong}$$

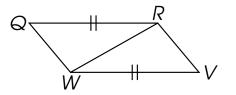


$$\frac{\overline{RW} \cong \overline{WR}}{\overline{RQ} \cong \overline{WV}}$$

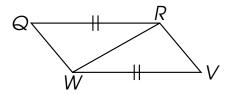


$$\overline{RW} \cong \overline{WR} 
\overline{RQ} \cong \overline{WV}$$

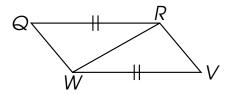
$$\angle QRW \cong$$



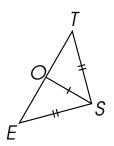
$$\overline{RW} \cong \overline{WR} \qquad \angle QRW \cong \angle VWR \\
\overline{RQ} \cong \overline{WV}$$

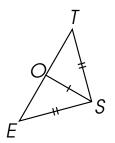


$$\begin{array}{ll} \overline{RW}\cong \overline{WR} & \angle QRW\cong \angle VWR \\ \overline{RQ}\cong \overline{WV} & \triangle QRW\cong \end{array}$$

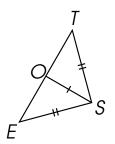


$$\overline{RW} \cong \overline{WR} \qquad \angle QRW \cong \angle VWR \\ \overline{RQ} \cong \overline{WV} \qquad \triangle QRW \cong \triangle VWR$$

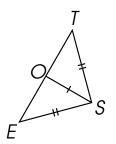




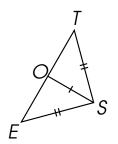
$$\overline{\it OS}\cong$$



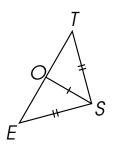
$$\overline{\mathit{OS}}\cong\overline{\mathit{OS}}$$



$$\overline{OS} \cong \overline{OS}$$
 $\overline{TS} \cong$ 

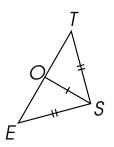


$$\overline{OS} \cong \overline{OS}$$
 $\overline{TS} \cong \overline{ES}$ 



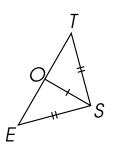
$$\overline{OS} \cong \overline{OS}$$
 $\overline{TS} \cong \overline{ES}$ 

$$\angle TSO \cong$$



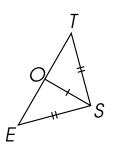
$$\overline{OS} \cong \overline{OS}$$
 $\overline{TS} \cong \overline{ES}$ 

$$\angle TSO \cong \angle ESO$$



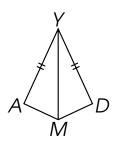
$$\overline{OS} \cong \overline{OS}$$
 $\overline{TS} \cong \overline{ES}$ 

$$\angle TSO \cong \angle ESO$$
  
 $\triangle TSO \cong$ 

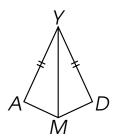


$$\overline{OS} \cong \overline{OS}$$
 $\overline{TS} \cong \overline{ES}$ 

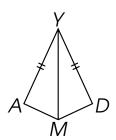
$$\angle TSO \cong \angle ESO$$
  
  $\triangle TSO \cong \triangle ESO$ 



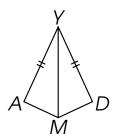
Complete the statements using the SAS congruence postulate.



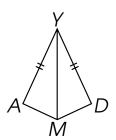
 $\overline{YM} \cong$ 



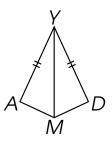
$$\overline{YM} \cong \overline{YM}$$



$$\overline{\underline{YM}} \cong \overline{\underline{YM}}$$
 $\overline{\underline{VA}} \cong$ 

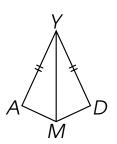


$$\overline{YM} \cong \overline{YM}$$
 $\overline{YA} \cong \overline{YD}$ 



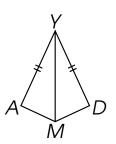
$$\overline{YM} \cong \overline{YM}$$
 $\overline{YA} \cong \overline{YD}$ 

$$\angle AYM \cong$$



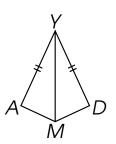
$$\overline{\underline{YM}} \cong \overline{\underline{YM}}$$
 $\overline{\underline{YA}} \cong \overline{\underline{YD}}$ 

$$\angle AYM \cong \angle DYM$$



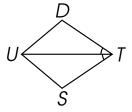
$$\overline{YM} \cong \overline{YM}$$
 $\overline{YA} \cong \overline{YD}$ 

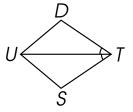
$$\angle AYM \cong \angle DYM$$
  
  $\triangle AYM \cong$ 



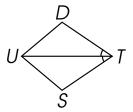
$$\overline{YM} \cong \overline{YM}$$
 $\overline{YA} \cong \overline{YD}$ 

$$\angle AYM \cong \angle DYM$$
  
  $\triangle AYM \cong \triangle DYM$ 

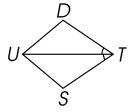




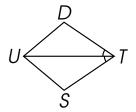
$$\overline{\mathit{UT}}\cong$$



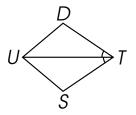
$$\overline{\mathit{UT}}\cong\overline{\mathit{UT}}$$



$$\overline{UT} \cong \overline{UT}$$
 $\angle DTU \cong$ 

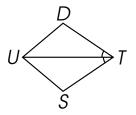


$$\overline{UT} \cong \overline{UT}$$
 $\angle DTU \cong \angle STU$ 



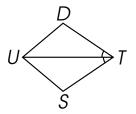
$$\overline{UT}\cong\overline{UT}$$
 $\angle DTU\cong \angle STU$ 

$$\overline{\mathit{DT}}\cong$$



$$\overline{UT} \cong \overline{UT}$$
 $\angle DTU \cong \angle STU$ 

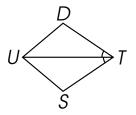
$$\overline{\mathit{DT}}\cong\overline{\mathit{ST}}$$



$$\overline{UT} \cong \overline{UT}$$

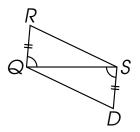
$$\angle DTU \cong \angle STU$$

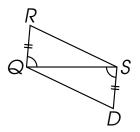
$$\overline{DT}\cong \overline{ST}$$
  $\triangle DTU\cong$ 



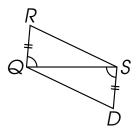
$$\overline{UT} \cong \overline{UT}$$
 $\angle DTU \cong \angle STU$ 

$$\overline{DT} \cong \overline{ST}$$
 $\triangle DTU \cong \triangle STU$ 

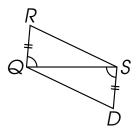




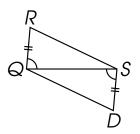
$$\overline{\mathsf{QS}}\cong$$



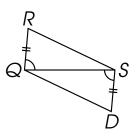
$$\overline{\mathit{QS}}\cong\overline{\mathit{SQ}}$$



$$\overline{QS} \cong \overline{SQ}$$
 $\overline{QR} \cong$ 

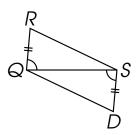


$$\overline{QS} \cong \overline{SQ}$$
 $\overline{QR} \cong \overline{SD}$ 



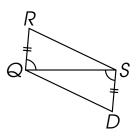
$$\overline{QS} \cong \overline{SQ}$$
 $\overline{QR} \cong \overline{SD}$ 

$$\angle RQS \cong$$



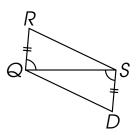
$$\overline{QS} \cong \overline{SQ}$$
 $\overline{QR} \cong \overline{SD}$ 

$$\angle RQS \cong \angle DSQ$$



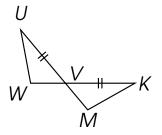
$$\overline{QS} \cong \overline{SQ}$$
 $\overline{QR} \cong \overline{SD}$ 

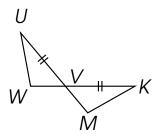
$$\angle RQS \cong \angle DSQ$$
  
 $\triangle RQS \cong$ 



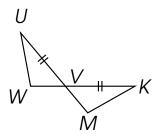
$$\overline{QS} \cong \overline{SQ}$$
 $\overline{QR} \cong \overline{SD}$ 

$$\angle RQS \cong \angle DSQ$$
  
 $\triangle RQS \cong \triangle DSQ$ 

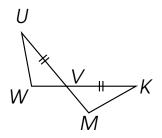




$$\overline{\mathit{UV}} \cong$$

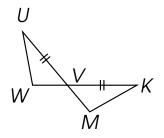


$$\overline{UV} \cong \overline{KV}$$



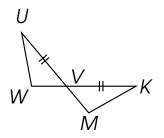
$$\overline{UV} \cong \overline{KV}$$

$$\angle UVW \cong$$



$$\overline{UV} \cong \overline{KV}$$

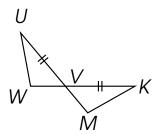
$$/UVW \cong /KVM$$



$$\overline{UV} \cong \overline{KV}$$

$$\angle UVW \cong \angle KVM$$

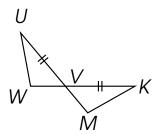
$$\overline{WV} \cong$$



$$\overline{UV} \cong \overline{KV}$$

$$\angle UVW \cong \angle KVM$$

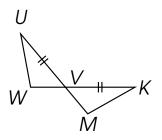
$$\overline{\mathit{WV}}\cong\overline{\mathit{MV}}$$



$$\overline{UV} \cong \overline{KV}$$

$$\angle UVW \cong \angle KVM$$

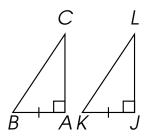
$$\overline{WV} \cong \overline{MV}$$
$$\triangle UVW \cong$$



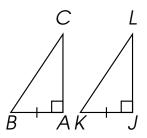
$$\overline{UV} \cong \overline{KV}$$

$$\angle UVW \cong \angle KVM$$

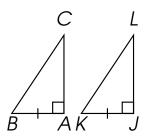
$$\overline{WV} \cong \overline{MV}$$
$$\triangle UVW \cong \triangle KVM$$



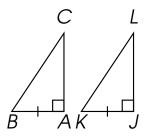
Complete the statements using the SAS congruence postulate.



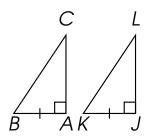
 $\overline{AB} \cong$ 



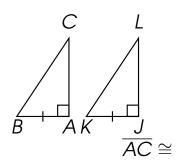
$$\overline{AB} \cong \overline{JK}$$



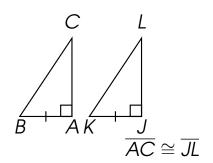
$$\overline{AB} \cong \overline{JK}$$
 $\angle A \cong$ 



$$\overline{AB} \cong \overline{JK}$$
 $\angle A \cong \angle J$ 



$$\overline{AB} \cong \overline{JK}$$
 $\angle A \cong \angle J$ 

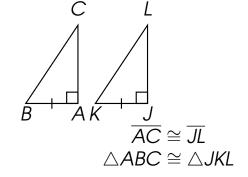


$$\overline{AB} \cong \overline{JK}$$
 $\angle A \cong \angle J$ 

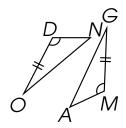
$$\begin{array}{ccc}
C & L \\
\hline
AC & & \\
\hline
AC & \cong \overline{JL} \\
\triangle ABC & \cong \\
\end{array}$$

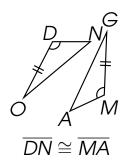
$$\overline{AB} \cong \overline{JK}$$
 $\angle A \cong \angle J$ 

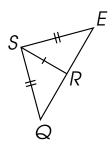
Complete the statements using the SAS congruence postulate.

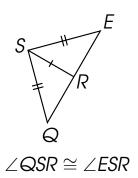


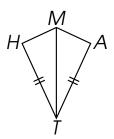
 $\overline{AB} \cong \overline{JK}$   $\angle A \cong \angle J$ 



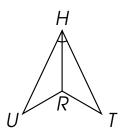


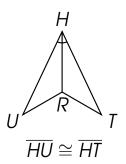


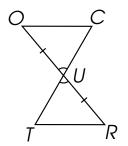


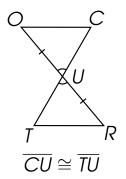


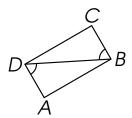


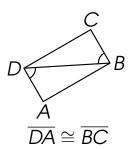


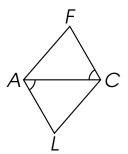


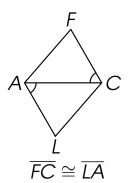


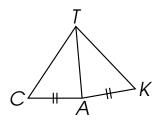




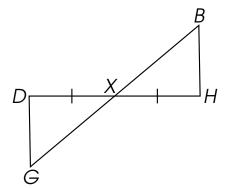


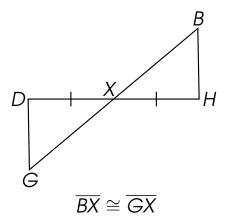


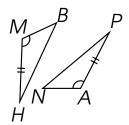


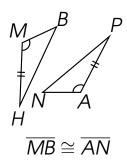












# Thank you for watching.