

### Write

Explain how you can list the six pairs of corresponding parts of congruent triangles by using the triangle congruence statement rather than a diagram.

### Remember

The SSS Congruence Theorem states that if three sides of one triangle are congruent to the corresponding sides of another triangle, then the triangles are congruent.

The SAS Congruence Theorem states that if two sides and the included angle of one triangle are congruent to the corresponding sides and included angle of another triangle, then the triangles are congruent.

The ASA Congruence Theorem states that if two angles and the included side of one triangle are congruent to the corresponding angles and included side of another triangle, then the triangles are congruent.

### Practice

- Draw two triangles that correspond with each congruence statement. Then list the six pairs of congruent corresponding parts.

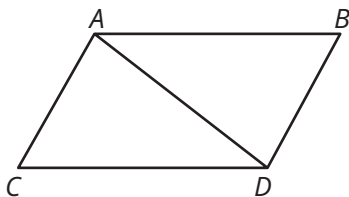
a.  $\triangle CGB \cong \triangle JMV$

b.  $\triangle LBR \cong \triangle MDS$

- For each figure, determine whether there is enough information to conclude that the indicated triangles are congruent. If so, state the theorem you used.

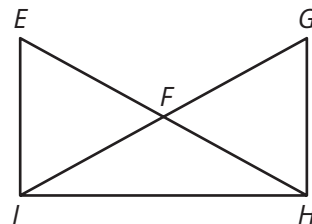
a. Given:  $\overline{AC} \parallel \overline{BD}$ ,  $\overline{AB} \parallel \overline{CD}$

Is  $\triangle ABD \cong \triangle DCA$ ?



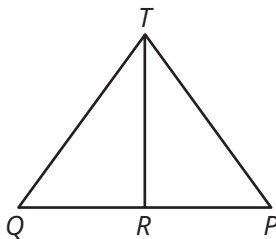
b. Given:  $\overline{EI} \cong \overline{GH}$ ,  $\overline{EH} \cong \overline{GI}$

Is  $\triangle EHI \cong \triangle GIH$ ?



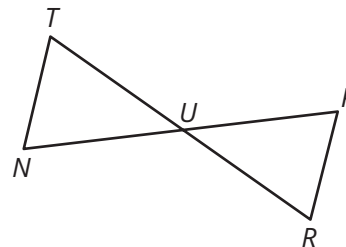
c. Given:  $\overline{TQ} \cong \overline{TP}$

Is  $\triangle TRQ \cong \triangle TRP$ ?

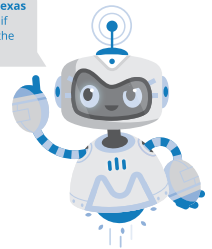


d. Given:  $\overline{TR}$  intersects  $\overline{NP}$ ,  $\overline{TU} \cong \overline{RU}$ ,  $\overline{NU} \cong \overline{PU}$

Is  $\triangle TUN \cong \triangle RUP$ ?

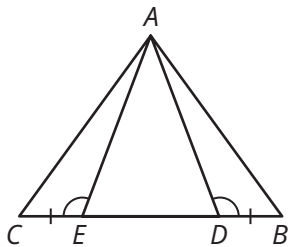


Visit [livehint.com/texas](https://livehint.com/texas) or use this QR code if you need a hint on the Practice questions.



Stretch

Consider the given figure.



The table shows a series of statements that lead to a conclusion that shows that  $\triangle CAD \cong \triangle BAE$ . Fill in the table by writing sentences that give the reasoning for the truth of each statement.

Statement	Reasoning
$\overline{CE} \cong \overline{DB}$	
$\angle AEC \cong \angle ADB$	
$m\angle AEC + m\angle AED = 180^\circ$	
$m\angle ADB + m\angle ADE = 180^\circ$	
$\angle AED \cong \angle ADE$	
$\overline{AE} \cong \overline{AD}$	
$\overline{ED} \cong \overline{ED}$	
$\overline{CD} \cong \overline{EB}$	
$\triangle CAD \cong \triangle BAE$	

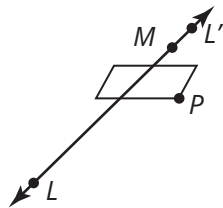
## Review

- Write the postulate that confirms the statement.

$$m\angle BCD + m\angle DCE = m\angle BCE$$

- Complete the translation given the function.

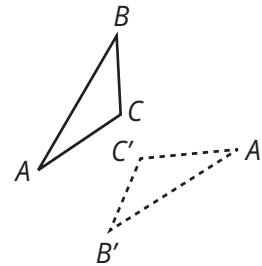
$$T_{L'M}(\text{Parallelogram}) = \text{Parallelogram}'$$



- Complete a truth table for the conditional statement.

If  $\angle A$  and  $\angle B$  are supplementary, then  $m\angle A + m\angle B = 180^\circ$ .

- Identify a sequence of transformations that will carry each given pre-image onto the image shown with dashed lines.



- A composite figure is graphed on the coordinate plane shown. Round your answers to the nearest hundredth, if necessary.

- Determine the perimeter of the figure.
- Calculate the area of the figure.

