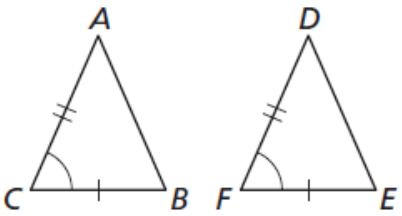
Determine which triangle congruence theorem, if any, can be used to prove the triangles are congruent.

1.



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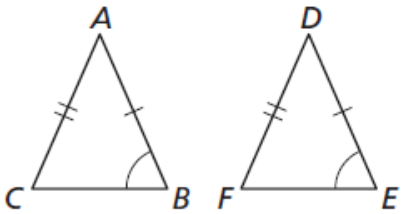

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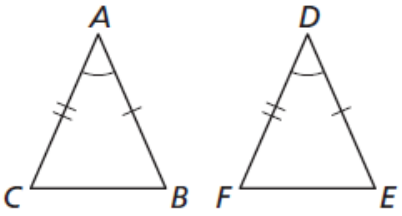

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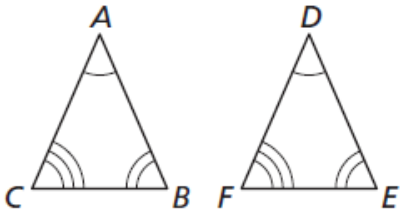


1. Graph $\triangle XYZ$, with vertices $X\,(3, 3)$, $Y\,(7, -1)$, $Z\,(8, 1)$, and and its image after the transformations.

Translation: $(x, y) \rightarrow (x - 13, y - 3)$

Translation: $(x, y) \rightarrow (x + 6, y + 8)$

Essential Question

What information is sufficient to determine whether two triangles are congruent?

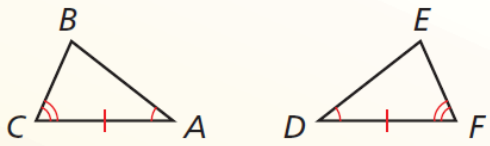
Theorem

Theorem 5.10 Angle-Side-Angle (ASA) Congruence Theorem

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

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

Proof p. 270

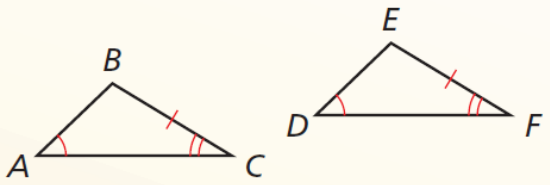


Theorem

Theorem 5.11 Angle-Angle-Side (AAS) Congruence Theorem

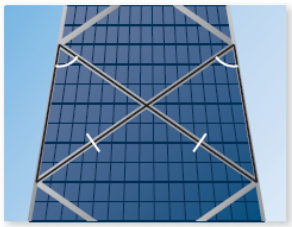
If two angles and a non-included side of one triangle are congruent to two angles and the corresponding non-included side of a second triangle, then the two triangles are congruent.

If $\angle A \cong \angle D$, $\angle C \cong \angle F$, and $\overline{BC} \cong \overline{EF}$, then $\triangle ABC \cong \triangle DEF$.

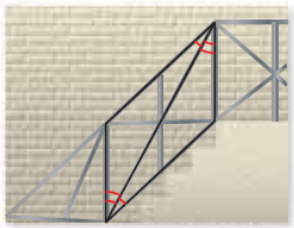


Proof p. 271

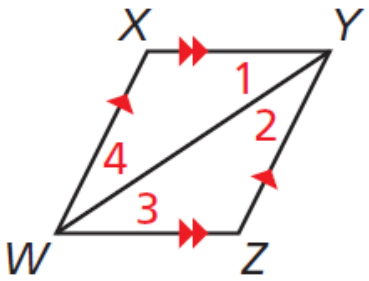
Can the triangles be proven congruent with the information given in the diagram? If so, state the theorem you would use.

a. 

b. 

c. 

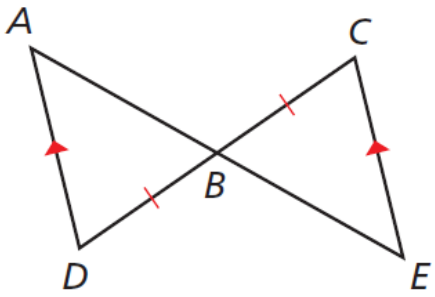
1. Can the triangles be proven congruent with the information given in the diagram? If so, state the theorem you would use.



Write a proof.

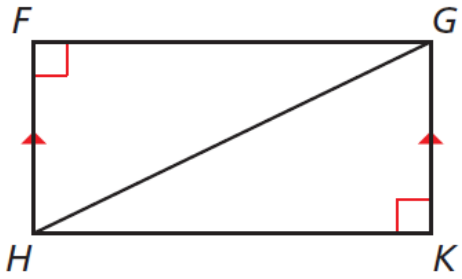
Given $\overline{AD} \parallel \overline{EC}$, $\overline{BD} \cong \overline{BC}$

Prove $\triangle ABD \cong \triangle EBC$

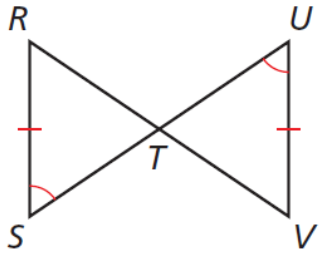


Write a proof.

Given $\overline{HF} \parallel \overline{GK}$, $\angle F$ and $\angle K$ are right angles.
Prove $\triangle HFG \cong \triangle GKH$



In the diagram, $\angle S \cong \angle U$ and $\overline{RS} \cong \overline{VU}$. Prove $\triangle RST \cong \triangle VUT$.



• **Response Logs:** Select from: “I feel like I made progress today …” or “I’m still not sure about …” or “A sticky part for me is ….”