

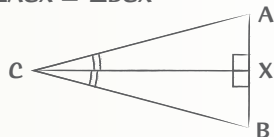


UNDERSTAND

- 10. Error Analysis** Stacy says there is not enough information to prove $\triangle ACX \cong \triangle BCX$. Explain why Stacy's statement is incorrect.

Given: $\angle AXC \cong \angle BXC$, $\angle ACX \cong \angle BCX$

Prove: $\triangle ACX \cong \triangle BCX$

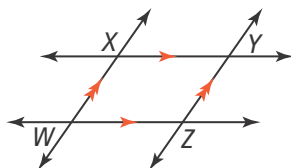


Not enough information

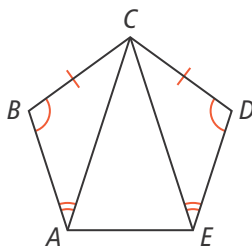


- 11. Mathematical Connections**

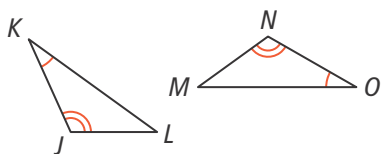
Given $\overleftrightarrow{WZ} \parallel \overleftrightarrow{XY}$
and $\overleftrightarrow{WX} \parallel \overleftrightarrow{ZY}$, write a
two-column proof to
show $\overline{WX} \cong \overline{YZ}$.



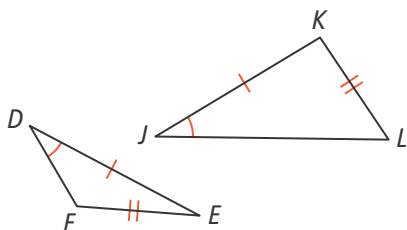
- 12. Use Structure** Given
the figure shown, write
a two-column proof to
prove $\angle CAE \cong \angle CEA$.



- 13. Reason** How might you decide what additional
piece of information you need to prove
 $\triangle JKL \cong \triangle NOM$?

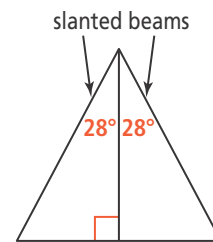


- 14. Higher Order Thinking** Describe a composition
of rigid motions that maps $\overline{DE}$ to $\overline{JK}$, $\overline{EF}$ to $\overline{KL}$,
and $\angle D$ to $\angle J$. Why does this composition
show that there is no angle-side-side
congruence criterion?



PRACTICE

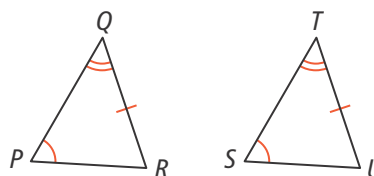
- 15.** Carpenters build a set of
triangular roof supports,
each with the measurements
shown. How can the
carpenters be sure all the
slanted beams are the same
length? SEE EXAMPLES 1–3



- 16.** Prove the Angle-Angle-Side Congruence
Criterion. SEE EXAMPLE 4

Given: $\angle P \cong \angle S$, $\angle Q \cong \angle T$, $\overline{QR} \cong \overline{TU}$

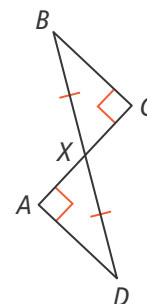
Prove: $\triangle PQR \cong \triangle STU$



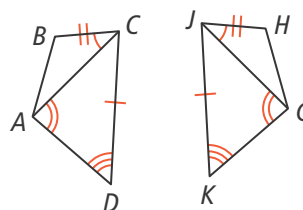
- 17.** Write a proof. SEE EXAMPLE 5

Given: $\angle A \cong \angle C$, $\overline{BX} \cong \overline{DX}$

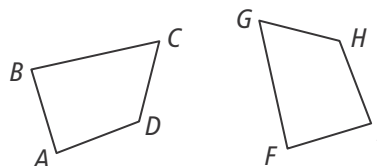
Prove: $\overline{AX} \cong \overline{CX}$



- 18.** Is $ABCD \cong GHJK$? Explain. SEE EXAMPLE 6



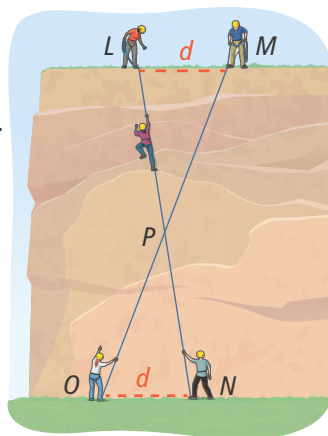
- 19.** If $ABCD \cong EFGH$, are all corresponding parts
congruent? Explain. SEE EXAMPLE 6



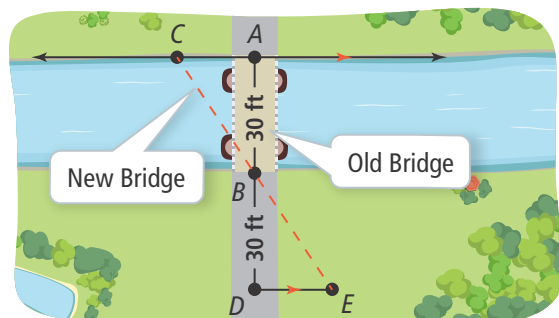
APPLY

20. Look for Relationships

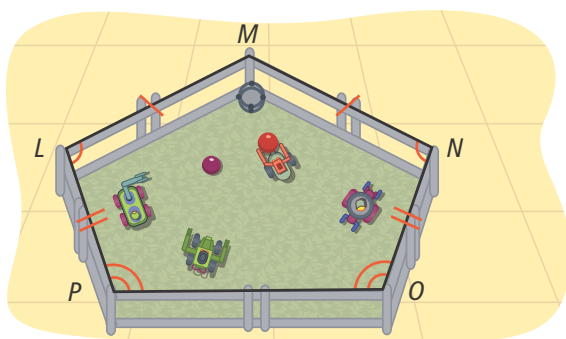
Climbers want to determine a halfway point up a vertical cliff. If the top and bottom are parallel, why is point P , where the ropes intersect, halfway up the cliff?



- 21. Use Appropriate Tools** Keisha, Dwayne, and Lonzell are planning for a new bridge to replace the old bridge. The new bridge will start at point B , where Dwayne is standing, and end at point C , where Keisha is standing. Lonzell walks to point D and then walks parallel to the river until he reaches point E , where he sees Dwayne and Keisha are aligned. Why is the distance from E to B the length of the new bridge?



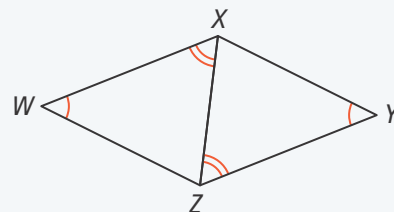
- 22. Construct Arguments** The Robotics Club wants to divide their robot battle arena into two congruent arenas for a tournament. Paxton says that if they build a wall perpendicular to and bisecting $\overline{PO}$ from M , then the arenas will be congruent. Is Paxton correct? Explain.



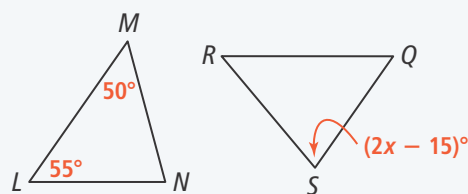
ASSESSMENT PRACTICE

- 23.** Given the figure shown, copy and complete the table to identify the congruent pairs.

$\angle W$	$\angle Y$
	$\angle ZXY$
$\angle WXZ$	
	$\overline{XZ}$
$\overline{WZ}$	

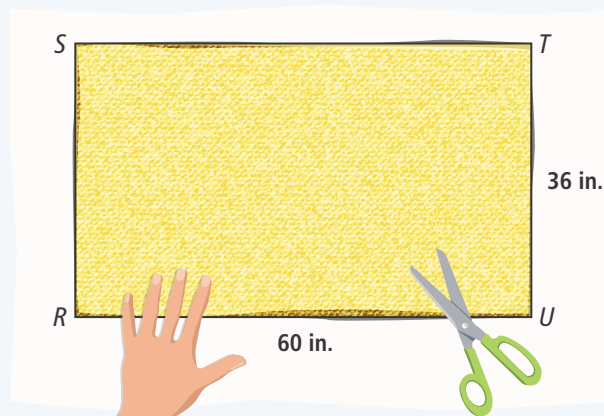


- 24. SAT/ACT** Given $\triangle LMN \cong \triangle QRS$, what is the value of x ?



- (A) 30 (B) 35 (C) 45 (D) 60

- 25. Performance Task** Gregory wants to make four congruent triangular flags using as much of the rectangular canvas shown as possible.



Part A Draw and label a diagram to show how Gregory should cut the fabric.

Part B Explain why the flags are congruent.

Part C Is there another way Gregory can cut the fabric to make 4 congruent triangular flags using the same amount of fabric? Explain.