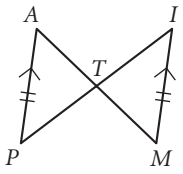
Lesson 4.4 • Are There Congruence Shortcuts?

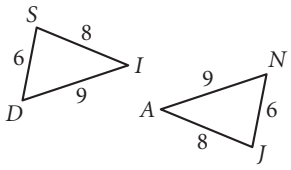
Name _____ **Period** _____ **Date** _____

In Exercises 1–3, name the conjecture that leads to each congruence.

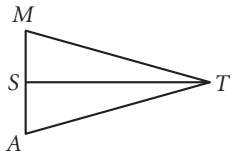
1. $\triangle PAT \cong \triangle IMT$



2. $\triangle SID \cong \triangle JAN$



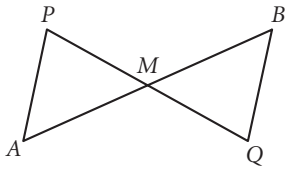
3. $\overline{TS}$ bisects $\overline{MA}$, $\overline{MT} \cong \overline{AT}$, and $\triangle MST \cong \triangle AST$



In Exercises 4–9, name a triangle congruent to the given triangle and state the congruence conjecture. If you cannot show any triangles to be congruent from the information given, write "cannot be determined" and redraw the triangles so that they are clearly not congruent.

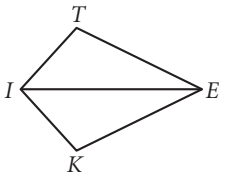
4. M is the midpoint of $\overline{AB}$ and $\overline{PQ}$.

$\triangle APM \cong \triangle$ _____

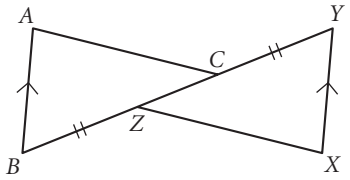


5. $KITE$ is a kite with $KI = TI$.

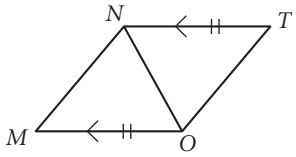
$\triangle KIE \cong \triangle$ _____



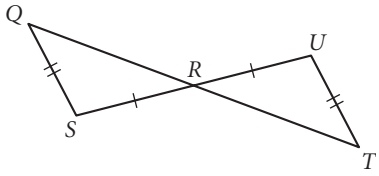
6. $\triangle ABC \cong$ _____



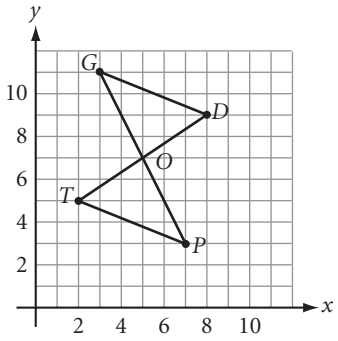
7. $\triangle MON \cong$ _____



8. $\triangle SQR \cong$ _____

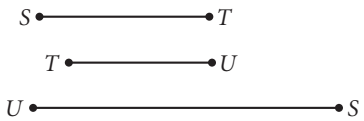


9. $\triangle TOP \cong$ _____

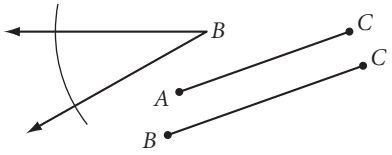


In Exercises 10–12, use a compass and a straightedge or patty paper and a straightedge to construct a triangle with the given parts. Then, if possible, construct a different (noncongruent) triangle with the same parts. If it is not possible, explain why not.

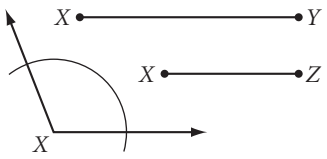
10.



11.



12.

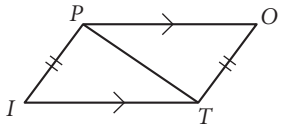


Lesson 4.5 • Are There Other Congruence Shortcuts?

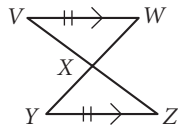
Name _____ **Period** _____ **Date** _____

In Exercises 1–6, name a triangle congruent to the given triangle and state the congruence conjecture. If you cannot show any triangles to be congruent from the information given, write "cannot be determined" and explain why.

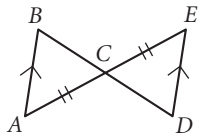
1. $\triangle PIT \cong \triangle$ _____



2. $\triangle XVW \cong \triangle$ _____

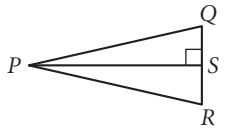


3. $\triangle ECD \cong \triangle$ _____

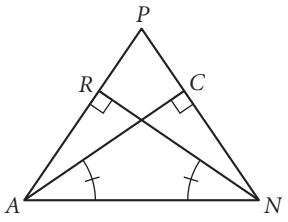


4. $\overline{PS}$ is the angle bisector of $\angle QPR$.

$\triangle PQS \cong \triangle$ _____

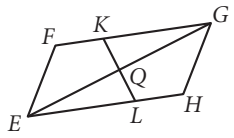


5. $\triangle ACN \cong \triangle$ _____

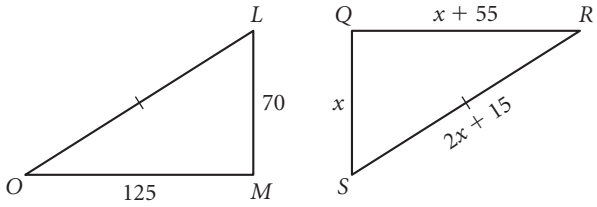


6. $EFGH$ is a parallelogram. $GQ = EQ$.

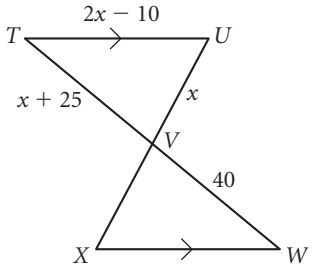
$\triangle EQL \cong \triangle$ _____



7. The perimeter of $\triangle QRS$ is 350 cm. Is $\triangle QRS \cong \triangle MOL$? Explain.

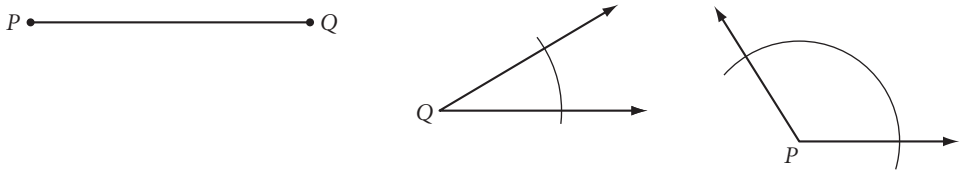


8. The perimeter of $\triangle TUV$ is 95 cm. Is $\triangle TUV \cong \triangle WXV$? Explain.



In Exercises 9 and 10, construct a triangle with the given parts. Then, if possible, construct a different (noncongruent) triangle with the same parts. If it is not possible, explain why not.

9.



10.