

Independent Practice

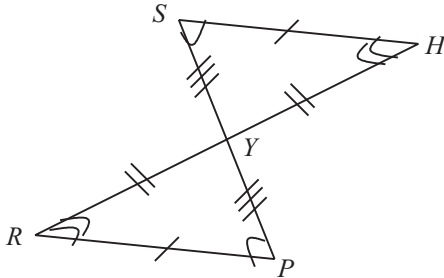
8.5

NAME _____

Module 8 Points, Lines, Angles, and Triangles
Lesson 5 Congruent Triangles

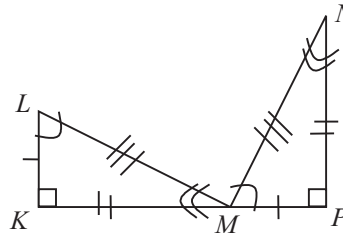
Name all the congruent corresponding parts. Then, write a congruence statement for the congruent triangles.

1.



$$\begin{aligned} \angle S &\cong \angle P & \overline{SH} &\cong \overline{PR} \\ \angle H &\cong \angle R & \overline{HY} &\cong \overline{RY} \\ \angle Y &\cong \angle Y & \overline{SY} &\cong \overline{PY} \\ \triangle SHY &\cong \triangle PRY \end{aligned}$$

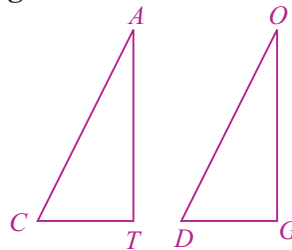
2.



$$\begin{aligned} \angle K &\cong \angle P & \overline{LK} &\cong \overline{MP} \\ \angle L &\cong \angle M & \overline{KM} &\cong \overline{PN} \\ \angle M &\cong \angle N & \overline{LM} &\cong \overline{MN} \\ \triangle KLM &\cong \triangle PMN \end{aligned}$$

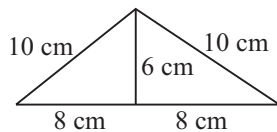
Draw $\triangle CAT \cong \triangle DOG$. Then, answer the following:

- Which side is congruent to \overline{DG} ? \overline{CT}
- Which side is congruent to \overline{TA} ? \overline{GO}
- Which angle is congruent to $\angle T$? $\angle G$



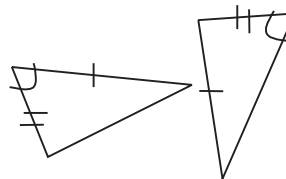
Determine whether the triangles are congruent. Write *yes* or *no*. If yes, state the rule of congruence.

6.



Yes: SSS Congruence

7.



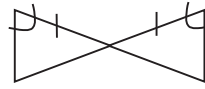
No

8.



Yes: SAS Congruence

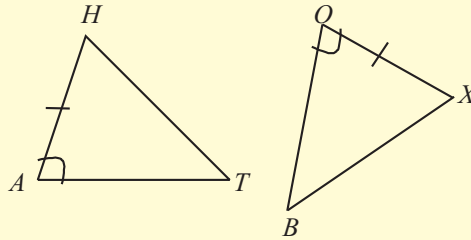
9.



Yes: ASA Congruence

Journal

1. Explain why two congruent triangles will have the same perimeter. Explain why two triangles with the same perimeter are not necessarily congruent.
2. Look at the triangles below. Name one more pair of corresponding parts that needs to be congruent for the triangles to be congruent. Is there another pair? Explain.



3. Describe the three ways to prove triangles congruent that involve showing fewer than all six corresponding parts congruent.

Cumulative Review

1. $\angle A$ and $\angle B$ are supplementary. Find $m\angle B$ if $m\angle A = 85^\circ$.

$$m\angle B = 95^\circ$$

2. $\angle C$ and $\angle D$ are vertical angles. Find $m\angle C$ if $m\angle D = 115^\circ$.

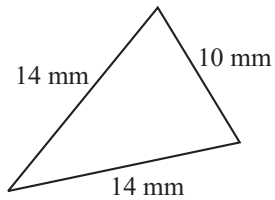
$$m\angle C = 115^\circ$$

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Module 8 **Points, Lines, Angles, and Triangles**
Lesson 5 **Congruent Triangles**

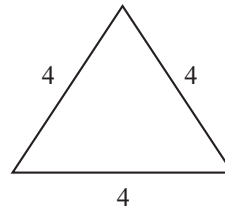
Classify the triangle by its sides.

3.



Isosceles

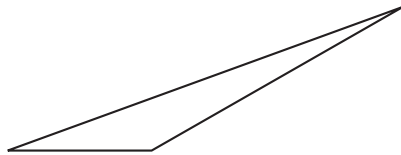
4.



Equilateral

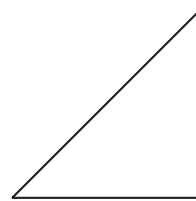
Classify the triangle by its angles.

5.



Obtuse

6.

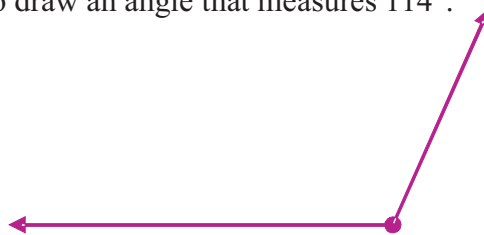


Right

7. One of the acute angles in a right triangle measures 63° . What is the measure of the other acute angle?

27°

8. Use a protractor to draw an angle that measures 114° .



Possible Journal Answers

1. Congruent triangles are the exact same size and shape. The side lengths in one triangle are equal to the side lengths in the other triangle. Since perimeter is the sum of the side lengths, the perimeters of the two triangles will be the same. Two triangles with the same perimeter are not necessarily congruent because even though the sum of the side lengths is the same, the individual lengths may be different. For example, one triangle can have side lengths of six, six, and six; and the side lengths of the other triangle can be five, five, and eight. In this case, the perimeters are both 18, but the triangles are not congruent because the side lengths are different.
2. The triangles would be congruent if $\angle H \cong \angle X$. They would be congruent by the Angle-Side-Angle Congruence. That is not the only possible way. The triangles would also be congruent if $\overline{AT} \cong \overline{OB}$ by the Side-Angle-Side Congruence.
3. One way to show two triangles congruent is to show that the three sides of one triangle have the same lengths as the three sides of the other triangle. This is called the Side-Side-Side Congruence. Another way is to show that two sides of one triangle are the same length as two sides of the other and that the angles between those sides are congruent. This is called the Side-Angle-Side Congruence. Two triangles are also congruent if two angles in one triangle are congruent to two angles in another triangle and that the sides between those angles are the same length. This is called the Angle-Side-Angle Congruence.