Assignment

Write

Describe the differences between a flow chart proof, a two-column proof, and a paragraph proof in your own words.

Remember

A proof is a logical series of statements and corresponding reasons that starts with a hypothesis and arrives at a conclusion. There is more than one way to organize a proof.
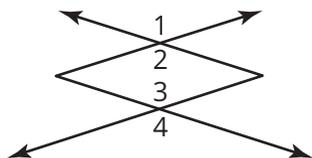
Practice

1. Identify the property that justifies each statement.
   a. If $\overline{AB} \cong \overline{PR}$ and $\overline{PR} \cong \overline{ST}$, then $\overline{AB} \cong \overline{ST}$.
   b. If $JK = 6$ centimeters and $CD = 6$ centimeters, then $JK = CD$.
   c. $\angle ABC \cong \angle ABC$
   d. If $m\angle 3 = m\angle 1$, then $m\angle 3 + m\angle 2 = m\angle 1 + m\angle 2$.

2. Enter the reasons to complete the two-column proof.

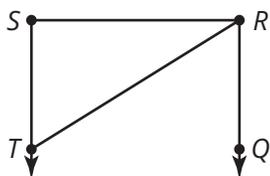   Given: $\angle 1 \cong \angle 4$
   Prove: $\angle 2 \cong \angle 3$

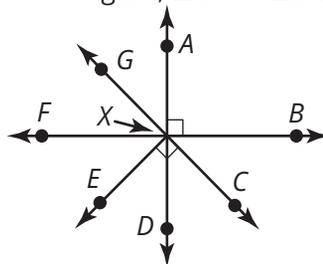| Statements	Reasons
1. $\angle 1 \cong \angle 4$	1. Given
2. $\angle 4 \cong \angle 3$	2.
3. $\angle 1 \cong \angle 2$	3.
4. $\angle 1 \cong \angle 3$	4.
5. $\angle 2 \cong \angle 3$	5. Transitive Property

3. Write a paragraph proof to prove the statement.

   Given: $m\angle QRS = 90°$
   Given: $\angle RTS \cong \angle QRT$
   Prove: $\angle RTS$ and $\angle TRS$ are complementary.

4. In the figure, $\angle GXF \cong \angle CXD$.
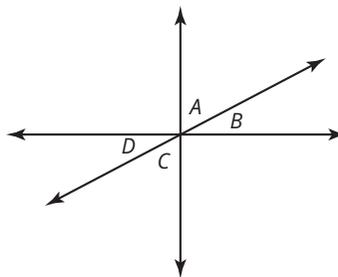

   a. What theorem tells you that $\angle AXG \cong \angle CXD$?
   b. What theorem tells you that $\angle EXF \cong \angle EXD$?
   c. What theorem tells you that $\angle GXD \cong \angle CXF$?
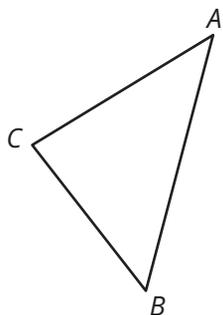
Stretch

Create a two-column proof.

Given: $\angle A$ and $\angle B$ are complementary.
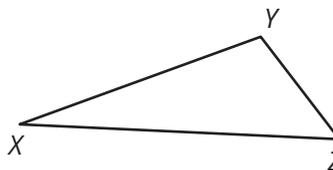
Prove: $\angle C$ and $\angle D$ are complementary.

Review

1. Use a compass and straightedge to construct the incenter of $\triangle ABC$.

2. Use a compass and straightedge to construct the circumcenter of $\triangle XYZ$.

3. Write a conjecture about corresponding angles. Draw an example to test your conjecture.

4. Draw an example of an inscribed angle and a central angle that intercepts the same arc of a circle. What conjecture can you make about the measure of the inscribed angle?

5. Determine whether each pair of triangles is congruent. If so, state whether they are congruent by SSS, SAS, or ASA. If not, explain why.

a.

b.