

# Geometry

## 2.5 Proving Statements about Segments and Angles

Given: Loaf of bread, jar of peanut butter, and jelly sitting on counter

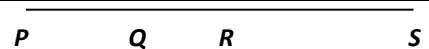
Prove: Make a peanut butter and jelly sandwich

**Congruence of segments and angles is reflexive, symmetric, and transitive.**

Writing proofs follow the same step as the sandwich.

1. Write the \_\_\_\_\_ and \_\_\_\_\_ written at the top for reference
2. Start with the \_\_\_\_\_ as step 1
3. The steps need to be in an \_\_\_\_\_ order
4. You cannot use an object without it \_\_\_\_\_
5. Remember the hypothesis states the \_\_\_\_\_ you are working with, the conclusion states what you are \_\_\_\_\_ with it
6. If you get stuck ask, "Okay, now I have \_\_\_\_\_. What do I know about \_\_\_\_\_?" and look at the \_\_\_\_\_ of your theorems, definitions, and properties.

Complete the proof by justifying each statement.



Given: Points  $P$ ,  $Q$ ,  $R$ , and  $S$  are collinear

Prove:  $PQ = PS - QS$

Statements	Reasons
Points $P$ , $Q$ , $R$ , and $S$ are collinear	
$PS = PQ + QS$	
$PS - QS = PQ$	
$PQ = PS - QS$	

Geometry 2.5

Name: \_\_\_\_\_

Write a two column proof

Given:  $\overline{AC} \cong \overline{DF}$ ,  $\overline{AB} \cong \overline{DE}$

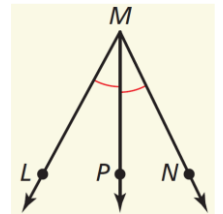
Prove:  $\overline{BC} \cong \overline{EF}$

Statements	Reasons

Prove this property of angle bisectors: If you know  $\overline{MP}$  bisects  $\angle LMN$ , prove that two times  $m\angle LMP$  is  $m\angle LMN$ .

Given:  $\overline{MP}$  bisects  $\angle LMN$

Prove:  $2(m\angle LMP) = m\angle LMN$



Assignment: 99 #1, 2, 4, 6, 10, 12, 14, 16, 17, 18, 23, 24, 25, 27, 30 = 15 total