Geometry

2.5 Proving Statements about Segments and Angles

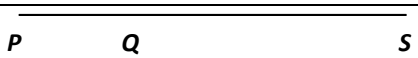
Given: Loaf of bread, jar of peanut butter, and jelly sitting on counter
Prove: Make a peanut butter and jelly sandwich

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*, and *S* are collinear
Prove: *PQ* = *PS* – *QS*



Statements	Reasons
Points *P*, *Q*, and *S* are collinear	
PS = *PQ* + *QS*	
PS – *QS* = *PQ*	
PQ = *PS* – *QS*	

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Write a two column proof

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

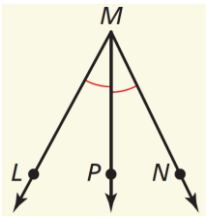
Prove: $\overline{BC} \cong \overline{EF}$

Statements	Reasons

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

Given: $\overrightarrow{MP}$ bisects ∠*LMN*

Prove: 2(m∠*LMP*) = m∠*LMN*



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