

NOTE TO TEACHER

What is included and how to use it

Proof Steps Poster:

Choose color or black and white. Print copies to laminate for the wall or for your proof station tables, or print one for each student to keep in a binder. These are a great reference tool for students who feel that the teacher is just making up the steps as they demonstrate.

Justifications List

Print one for each student who needs this type of aid. Have students write in additional justifications that you may come across in your particular course. There is extra space to add to each category as you get into congruent triangle proofs and beyond. As your class gets more comfortable with justifying steps, slowly let them depend on it less. You decide whether to allow this reference sheet on quizzes and tests.

Challenge Proof

Two versions for the worksheet are included. One has a blank two-column chart, and the other has statements filled in so students only need to add justifications. Choose one, or print some of each to differentiate.

Terms of Use

Thank you for downloading this product!

Permission is granted to copy pages for use within your own classroom or for your students. Placing any part of this product online in any form is a violation of the Digital Millennium Copyright Act.

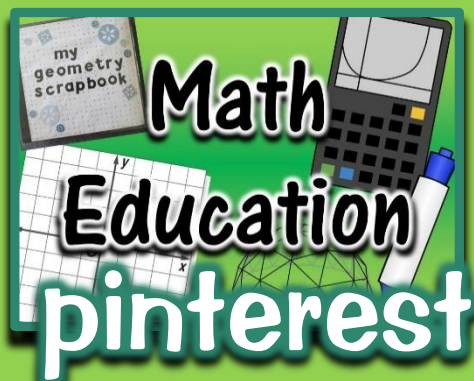
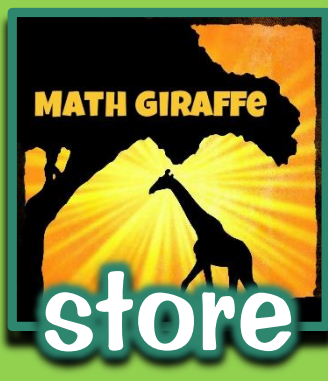
Please visit my [store](#) to check out the other math resources I have created. Thanks!

All images are created by Math Giraffe or are in the public domain.

© Copyright 2015 Math Giraffe

Connect With Me

email: mathgiraffe.bd@gmail.com



Writing a Two-Column Geometry Proof

**MAKE
A
PLAN**

Steps:

1. Copy all **given** information
2. **pause** to get an understanding of what you know and what you are trying to prove. **MAKE MARKS ON THE DIAGRAM.**
3. Write and work with **EQUATIONS BASED ON THE GIVEN STATEMENTS** if possible. (sometimes you can convert statements into equations using **Definitions**)
4. Develop **new equations from the diagram** if possible.
5. **Manipulate and combine** your equations, always keeping your **GOAL IN MIND**. (you can sometimes use the transitive property or substitution to combine two lines)





Writing a Two-Column Geometry Proof

Steps:

1. Copy all **given** information
2. **pause** to get an understanding of what you know and what you are trying to prove. **MAKE MARKS ON THE DIAGRAM.**
3. Write and work with **EQUATIONS BASED ON THE GIVEN STATEMENTS** if possible. (sometimes you can convert statements into equations using **Definitions**)
4. Develop **new equations from the diagram** if possible.
5. **Manipulate and combine** your equations, always keeping your **GOAL IN MIND**. (you can sometimes use the transitive property or substitution to combine two lines)



**JUSTIFY
EACH
STEP**

PROPERTIES

Addition Property of Equality
Subtraction Property of Equality
Multiplication Property of Equality
Division Property of Equality
Reflexive Property of Equality
Reflexive Property of Congruence
Symmetric Property of Equality
Symmetric Property of Congruence
Transitive Property of Equality
Transitive Property of Congruence
Substitution

Justifications

DEFINITIONS

congruent
bisect
midpoint
right angle
complement
supplement

POSTULATES

Angle Addition Postulate
Segment Addition Postulate
Corresponding Angles Postulate (& its Converse)

THEOREMS

Vertical Angles Theorem
Right Angles Theorem
Linear Pair Theorem
Alternate Interior Angles Theorem (& its Converse)
Alternate Exterior Angles Theorem (& its Converse)
Same-Side Interior Angles Theorem (& its Converse)
Same-Side Exterior Angles Theorem (& its Converse)
Triangle Sum Theorem
Base Angles of an Isosceles Triangle Theorem (& its Converse)



**JUSTIFY
EACH
STEP**

PROPERTIES

Addition Property of Equality
Subtraction Property of Equality
Multiplication Property of Equality
Division Property of Equality
Reflexive Property of Equality
Reflexive Property of Congruence
Symmetric Property of Equality
Symmetric Property of Congruence
Transitive Property of Equality
Transitive Property of Congruence
Substitution

Justifications

DEFINITIONS

congruent
bisect
midpoint
right angle
complement
supplement

POSTULATES

Angle Addition Postulate
Segment Addition Postulate
Corresponding Angles Postulate (& its Converse)

THEOREMS

Vertical Angles Theorem
Right Angles Theorem
Linear Pair Theorem
Alternate Interior Angles Theorem (& its Converse)
Alternate Exterior Angles Theorem (& its Converse)
Same-Side Interior Angles Theorem (& its Converse)
Same-Side Exterior Angles Theorem (& its Converse)
Triangle Sum Theorem
Base Angles of an Isosceles Triangle Theorem (& its Converse)

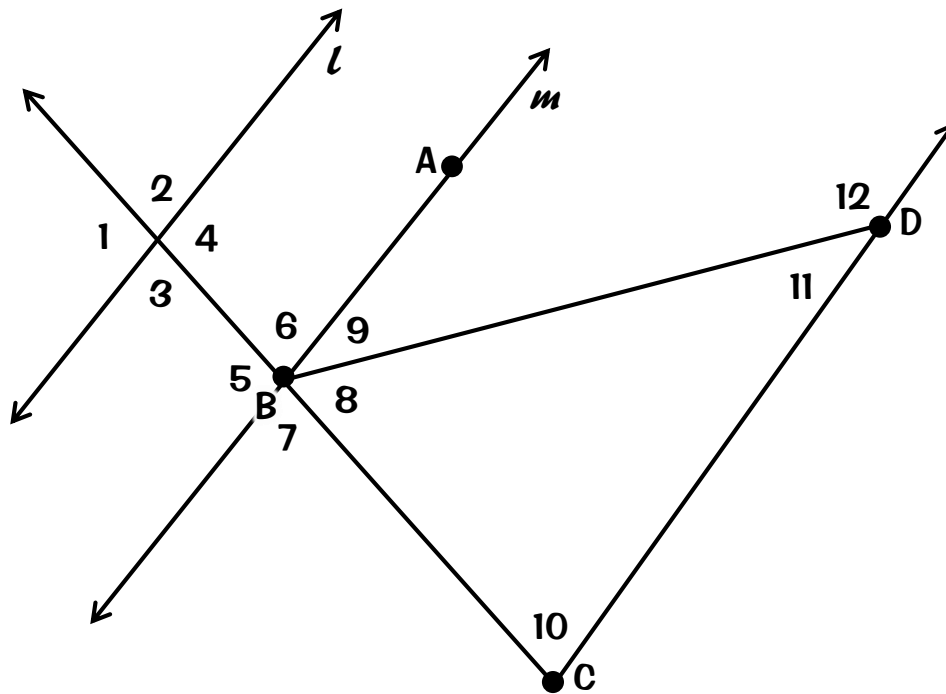


Name:

Date:

Class:

Challenge Proof



Given: $l \parallel m$,
 $\angle 9 \cong \angle 10$

Prove: $\angle 1 \cong \angle 12$

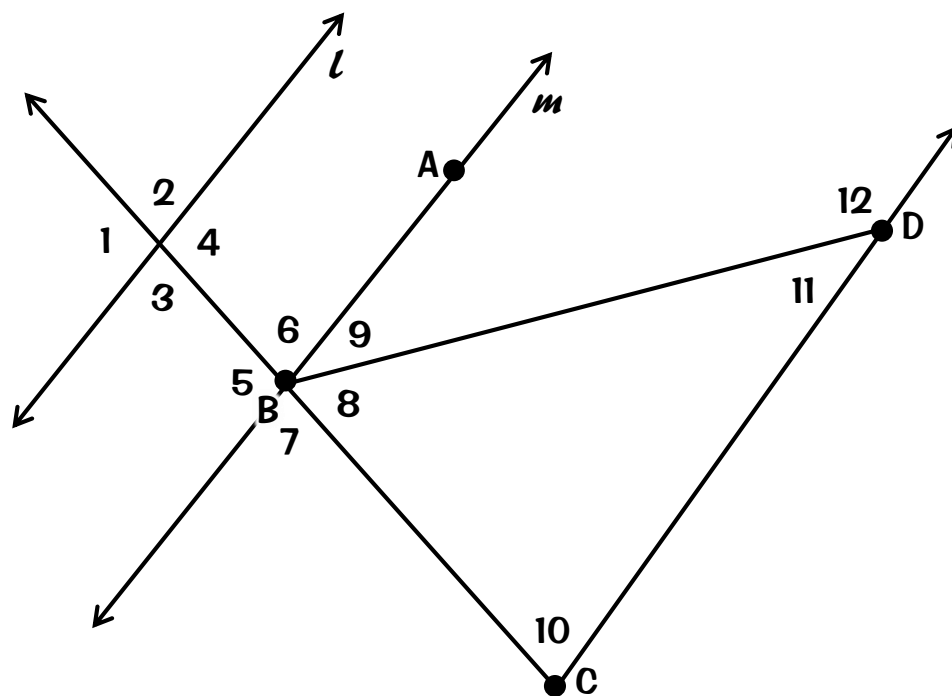
	Statement	Justification
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Name:

Date:

Class:

Challenge Proof



Given: $l \parallel m$,
 $\angle 9 \cong \angle 10$

Prove: $\angle 1 \cong \angle 12$

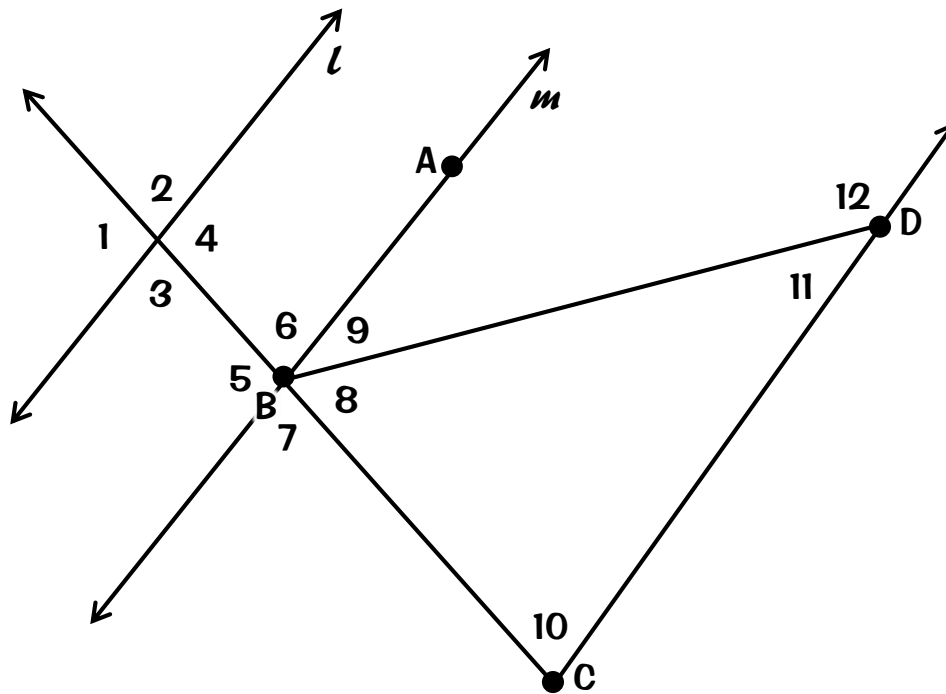
	Statement	Justification
1	$l \parallel m$	
2	$\angle 9 \cong \angle 10$	
3	$m\angle 9 = m\angle 10$	
4	$\angle 1 \cong \angle ABC$	
5	$m\angle 1 = m\angle ABC$	
6	$m\angle ABC = m\angle 8 + m\angle 9$	
7	$m\angle 1 = m\angle 8 + m\angle 9$	
8	$m\angle 1 = m\angle 8 + m\angle 10$	
9	$m\angle 12 = m\angle 8 + m\angle 10$	
10	$m\angle 1 = m\angle 12$	
11	$\angle 1 \cong \angle 12$	
12		
13		
14		
15		

Name:

Date:

Class:

Challenge Proof



Given: $l \parallel m$,
 $\angle 9 \cong \angle 10$

Prove: $\angle 1 \cong \angle 12$

	Statement	Justification
1	$l \parallel m$	Given
2	$\angle 9 \cong \angle 10$	Given
3	$m\angle 9 = m\angle 10$	Defn. congruent
4	$\angle 1 \cong \angle ABC$	Alternate Exterior Angles Theorem
5	$m\angle 1 = m\angle ABC$	Defn. congruent
6	$m\angle ABC = m\angle 8 + m\angle 9$	Angle Addition Postulate
7	$m\angle 1 = m\angle 8 + m\angle 9$	Substitution (5, 6)
8	$m\angle 1 = m\angle 8 + m\angle 10$	Substitution (3, 7)
9	$m\angle 12 = m\angle 8 + m\angle 10$	Exterior Angle Theorem
10	$m\angle 1 = m\angle 12$	Transitive Property (8, 9)
11	$\angle 1 \cong \angle 12$	Defn. congruent
12		
13		
14		
15		