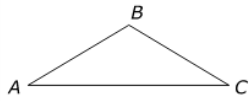


31.

Given: In  $\triangle ABC$  shown,  $\overline{BA} \cong \overline{BC}$ .



Prove:  $\angle A \cong \angle C$

Statement	Reason
1)	1) Given
2)	2)
3)	3) Definition of midpoint
4)	4)
5)	5)
6)	6)

**Part A**

Select from the drop-down menus to correctly complete step 2 of the proof.

Choose...  
 let D be the midpoint of line segment AB  
 let D be the midpoint of line segment AC  
 let D be the midpoint of line segment BC

because

Choose...  
 every line has exactly one midpoint  
 every segment has exactly one midpoint  
 every triangle has exactly one midpoint

**Part B**

Select from the drop-down menus to correctly complete step 4 of the proof.

Choose...  
 angle ADB is congruent to angle CDB  
 triangle ADB is congruent to triangle CDB  
 line segment BD is congruent to line segment BD

because of the

Choose...  
 reflexive property of congruence  
 definition of perpendicular bisector  
 Side Angle Side congruence postulate

**Part C**

Select from the drop-down menus to correctly complete step 5 of the proof.

Choose...  
 triangle ABD is similar to triangle CBD  
 triangle ABD is congruent to triangle CBD  
 angle ABD is congruent to angle CBD

because of the

Angle Angle similarity postulate  
 Side Side Side congruence postulate  
 Side Angle Side congruence postulate

**Part D**

What is the correct reason for the statement in step 6?

- A. the transitive property of congruence
- B. base angles of isosceles triangles are congruent
- C. corresponding parts of congruent triangles are congruent
- D. vertical angles are congruent