02-06-Sample Quiz-Triangle Proofs

Multiple Choice
Identify the choice that best completes the statement or answers the question.

___ 1. Based on the diagram and congruent marks, what would be a correct congruence statement and the most likely reason the triangles might be congruent?

a. $\triangle JKE \cong \triangle LYE$ because SSS  
b. $\triangle JKE \cong \triangle LYE$ because SAS  
c. $\triangle JKE \cong \triangle LYE$ because ASA  
d. $\triangle JKE \cong \triangle LYE$ because AAS  
e. There is not enough information to guarantee congruent triangles.

___ 2. Based on the diagram and congruent marks, what would be a correct congruence statement and the most likely reason the triangles might be congruent?

a. $\triangle CSL \cong \triangle ASL$ because SSS  
b. $\triangle CSL \cong \triangle ASL$ because SAS  
c. $\triangle CSL \cong \triangle ASL$ because ASA  
d. $\triangle CSL \cong \triangle ASL$ because AAS  
e. There is not enough information to guarantee congruent triangles.
3. Consider the diagram, congruent marks, and circle with a center at point B.

What would be a correct congruence statement and the most likely direct reason the triangles might be congruent?

a. $\triangle ABD \cong \triangle CBD$ because $\text{SSS}$
b. $\triangle ABD \cong \triangle CBD$ because $\text{SAS}$
c. $\triangle ABD \cong \triangle CBD$ because $\text{ASA}$
d. $\triangle ABD \cong \triangle CBD$ because $\text{AAS}$
e. There is not enough information to guarantee congruent triangles.

4. Based on the diagram and congruent marks, what would be a correct congruence statement and the most likely reason the triangles might be congruent?

a. $\triangle BAT \cong \triangle MAN$ because $\text{HL}$
b. $\triangle BAT \cong \triangle MAN$ because $\text{SAS}$
c. $\triangle BAT \cong \triangle MAN$ because $\text{ASA}$
d. $\triangle BAT \cong \triangle MAN$ because $\text{AAS}$
e. There is not enough information to guarantee congruent triangles.
5. Based on the diagram and congruent marks, what would be a correct congruence statement and the most likely reason the triangles might be congruent?

a. $\triangle FED \cong \triangle RAL$ because SSS
b. $\triangle FED \cong \triangle RAL$ because SAS
c. $\triangle FED \cong \triangle RAL$ because ASA
d. $\triangle FED \cong \triangle RAL$ because HL
e. There is not enough information to guarantee congruent triangles.

6. Given:
   - $AR$ is the perpendicular bisector of $MK$.

   Prove: $\triangle MAR \cong \triangle KAR$.

<table>
<thead>
<tr>
<th>Statements</th>
<th>Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. $AR$ is the perpendicular bisector of $MK$.</td>
<td>Given</td>
</tr>
<tr>
<td>2. $MR \cong KR$</td>
<td>Definition of a bisector</td>
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<tr>
<td>3. $AR \cong AR$</td>
<td>Reflexive Property of Congruence</td>
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<tr>
<td>4. $\angle MRA$ and $\angle KRA$ are right angles.</td>
<td>Definition of perpendicular lines</td>
</tr>
<tr>
<td>5. $\angle MRA \cong \angle KRA$</td>
<td>All right angles are congruent</td>
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</table>
| 6. $\triangle MAR \cong \triangle KAR$ | ???

What would be the reason on the last step of the proof?

a. AAS
b. ASA
c. SAS
d. SSS
e. HL
7. **Given:**
- \( \angle R \cong \angle P \)
- \( \triangle TSQ \) forms an isosceles triangle with a base of \( 
\overline{TQ} \n \)

**Prove:** \( \triangle TRQ \cong \triangle QPT \).

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<tr>
<td>1. ( \angle R \cong \angle P )</td>
<td>Given</td>
</tr>
<tr>
<td>2. ( \triangle TSQ ) is an isosceles triangle with base ( \overline{TQ} )</td>
<td>Given</td>
</tr>
<tr>
<td>3. ( \angle PTQ \cong \angle RQT )</td>
<td>???</td>
</tr>
<tr>
<td>4. ( \overline{QT} \cong \overline{QT} )</td>
<td>Reflexive Property of Congruence</td>
</tr>
<tr>
<td>5. ( \triangle TRQ \cong \triangle QPT )</td>
<td>Angle-Angle-Side (AAS) Theorem</td>
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What would be the **reason** on the 3rd step of the proof?

a. Reflexive Property of Congruence  
b. Alternate Interior Angles Theorem  
c. Definition of Midpoint  
d. Isosceles Triangle Theorem  
e. Vertical Angles are Congruent