Congruent Triangles

Progress Assessment

Circle the letter of the best answer.

1. $\triangle ABC$ and $\triangle XYZ$ are congruent triangles. Which statement is known to be true?

   a. $\angle A \cong \angle B$

   b. $\angle X \cong \angle Y$

   c. $\angle B \cong \angle Y$

   d. $\angle A \cong \angle Y$

2. $\triangle DEF$ and $\triangle TUV$ are congruent triangles. Which statement is known to be true?

   a. $\overline{DE} \cong \overline{TU}$

   b. $\overline{DF} \cong \overline{TU}$

   c. $\overline{DF} \cong \overline{UV}$

   d. $\overline{DE} \cong \overline{TV}$

3. If there are two triangles for which $\overline{FH} \cong \overline{MP}$, $\overline{HJ} \cong \overline{PR}$, and $\overline{FJ} \cong \overline{MR}$, which statement is known to be true?

   a. $\triangle FHJ \cong \triangle RMP$

   b. $\triangle FHJ \cong \triangle MPR$

   c. $\triangle FHJ \cong \triangle RPM$

   d. $\triangle FJH \cong \triangle MPR$

4. $\triangle DEF$ and $\triangle GHI$ are congruent triangles where $\angle F \cong \angle I$. Which pairs of congruent components also indicate that the two triangles are congruent?

   a. $\angle D \cong \angle G$ and $\overline{DF} \cong \overline{GI}$

   b. $\overline{FE} \cong \overline{HI}$ and $\overline{DE} \cong \overline{GH}$

   c. $\angle D \cong \angle G$ and $\overline{DF} \cong \overline{HI}$

   d. $\angle D \cong \angle G$ and $\angle E \cong \angle H$

5. Which set of equivalent measures does not make it possible to determine if any two given triangles are congruent?

   a. angle-side-angle

   b. side-angle-side

   c. angle-angle-side

   d. angle-angle-angle

6. A triangle congruent to $\triangle DEF$ is to be constructed. Only three components are measured. Which three components, if constructed in the order listed, will always create a congruent triangle?

   a. angle-angle-angle

   b. side-angle-side

   c. side-side-angle

   d. Only the three side lengths can be used to create a congruent triangle.

continued

7. For $\triangle ABC$ and $\triangle DEF$, the following is given: $\overline{AB} \cong \overline{DE}$, $\overline{BC} \cong \overline{EF}$, and $\overline{AC} \cong \overline{DF}$. By which triangle congruence statement can it be concluded that the triangles are congruent?

   a. SSS

   b. SAS

   c. ASA

   d. AAS

8. For $\triangle ABC$ and $\triangle DEF$, the following is given: $\angle A \cong \angle D$, $\angle B \cong \angle E$, and $\overline{BC} \cong \overline{EF}$. By which triangle congruence statement can it be concluded that the triangles are congruent?

   a. AAS

   b. SAS

   c. ASA

   d. It cannot be determined if the triangles are congruent.

9. For $\triangle ABC$ and $\triangle DEF$, the following is given: $\overline{AB} \cong \overline{DE}$, $\overline{AC} \cong \overline{DF}$, and $\triangle ABC$ and $\triangle DEF$ are both right triangles with $m\angle B = m\angle E = 90^\circ$. By which triangle congruence statement can it be concluded that the triangles are congruent?

   a. SSS

   b. SAS

   c. HL

   d. It cannot be determined if the triangles are congruent.

10. For $\triangle ABC$ and $\triangle DEF$, the following is given: $\angle C \cong \angle F$, $\overline{BC} \cong \overline{EF}$, and $\overline{AC} \cong \overline{DF}$. By which triangle congruence statement can it be concluded that the triangles are congruent?

    a. SSS

    b. SAS

    c. ASA

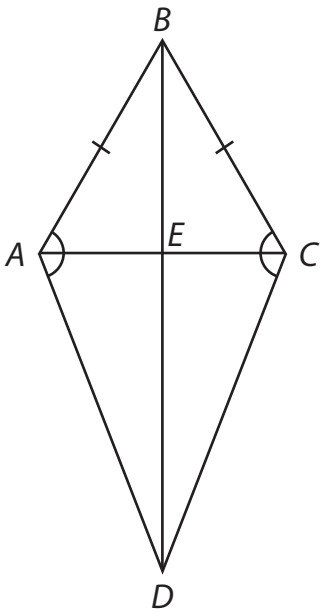
    d. It cannot be determined if the triangles are congruent.

continued

Use what you have learned about triangle congruence to solve the following problem.

11. Angelo is creating a kite and wants to determine congruent parts.

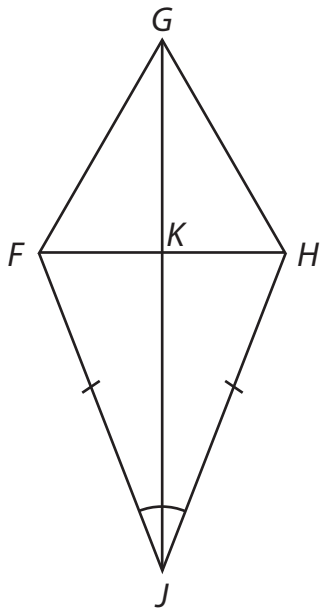
    a. Use the information in the diagram to list congruent parts of the kite.



    b. Based on the information provided, is $\triangle ABD \cong \triangle CBD$? Explain your answer.

continued

c. Angelo is creating a second, smaller kite for his brother. Use the information in the diagram to list congruent parts of the kite.



d. Based on the information provided, is $\triangle FKJ \cong \triangle HKJ$? Explain your answer.

e. List all the different pieces of information needed to prove congruency for each triangle congruence theorem.