NAME _____ DATE _____ PERIOD _____

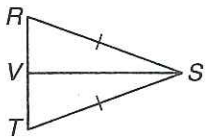
4-4 Practice

Proving Congruence—SSS, SAS

Determine whether $\triangle DEF \cong \triangle PQR$ given the coordinates of the vertices. Explain.

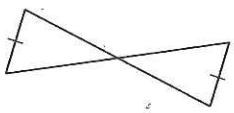
1. $D(-6, 1)$, $E(1, 2)$, $F(-1, -4)$, $P(0, 5)$, $Q(7, 6)$, $R(5, 0)$

3. Write a flow proof.
Given: $\overline{RS} \cong \overline{TS}$
V is the midpoint of $\overline{RT}$.
Prove: $\triangle RSV \cong \triangle TSV$

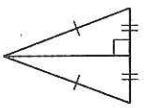


Determine which postulate can be used to prove that the triangles are congruent. If it is not possible to prove that they are congruent, write *not possible*.

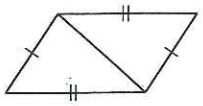
4.



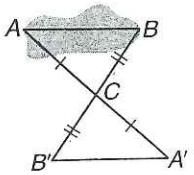
5.



6.



7. **INDIRECT MEASUREMENT** To measure the width of a sinkhole on his property, Harmon marked off congruent triangles as shown in the diagram. How does he know that the lengths $A'B'$ and AB are equal?



NAME _____ DATE _____ PERIOD ____

4-4 Skills Practice

Proving Congruence—SSS, SAS

Determine whether $\triangle ABC \cong \triangle KLM$ given the coordinates of the vertices. Explain.

1. $A(-3, 3)$, $B(-1, 3)$, $C(-3, 1)$, $K(1, 4)$, $L(3, 4)$, $M(1, 6)$

   $AB = 2$, $KL = 2$, $BC = 2\sqrt{2}$, $LM = 2\sqrt{2}$, $AC = 2$, $KM = 2$.

   The corresponding sides have the same measure and are congruent, so $\triangle ABC \cong \triangle KLM$ by SSS.

2. $A(-4, -2)$, $B(-4, 1)$, $C(-1, -1)$, $K(0, -2)$, $L(0, 1)$, $M(4, 1)$

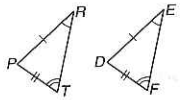
   $AB = 3$, $KL = 3$, $BC = \sqrt{13}$, $LM = 4$, $AC = \sqrt{10}$, $KM = 5$.

   The corresponding sides are not congruent, so $\triangle ABC$ is not congruent to $\triangle KLM$.

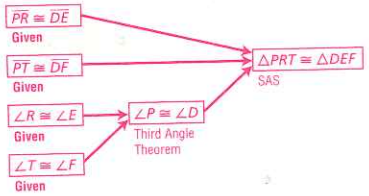
3. Write a flow proof.

   Given: $\overline{PR} \cong \overline{DE}$, $\overline{PT} \cong \overline{DF}$
   $\angle R \cong \angle E$, $\angle T \cong \angle F$

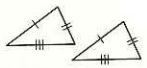
   Prove: $\triangle PRT \cong \triangle DEF$



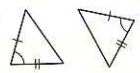
Proof:



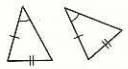
Determine which postulate can be used to prove that the triangles are congruent. If it is not possible to prove that they are congruent, write *not possible*.

4. 

   SSS

5. 

   SAS

6. 

   not possible

Lesson 4-4

NAME _____ DATE _____ PERIOD ____

4-4 Practice (Average)

Proving Congruence—SSS, SAS

Determine whether $\triangle DEF \cong \triangle PQR$ given the coordinates of the vertices. Explain.

1. $D(-6, 1)$, $E(1, 2)$, $F(-1, -4)$, $P(0, 5)$, $Q(7, 6)$, $R(5, 0)$

   $DE = 5\sqrt{2}$, $PQ = 5\sqrt{2}$, $EF = 2\sqrt{10}$, $QR = 2\sqrt{10}$, $DF = 5\sqrt{2}$, $PR = 5\sqrt{2}$.
   $\triangle DEF \cong \triangle PQR$ by SSS since corresponding sides have the same measure and are congruent.

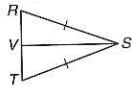
2. $D(-7, -3)$, $E(-4, -1)$, $F(-2, -5)$, $P(2, -2)$, $Q(5, -4)$, $R(0, -5)$

   $DE = \sqrt{13}$, $PQ = \sqrt{13}$, $EF = 2\sqrt{5}$, $QR = \sqrt{26}$, $DF = \sqrt{29}$, $PR = \sqrt{13}$.
   Corresponding sides are not congruent, so $\triangle DEF$ is not congruent to $\triangle PQR$.

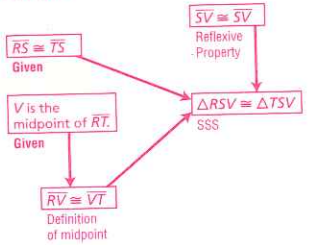
3. Write a flow proof.

   Given: $\overline{RS} \cong \overline{TS}$
   V is the midpoint of $\overline{RT}$.

   Prove: $\triangle RSV \cong \triangle TSV$



Proof:



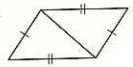
Determine which postulate can be used to prove that the triangles are congruent. If it is not possible to prove that they are congruent, write *not possible*.

4. 

   not possible

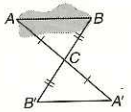
5. 

   SAS or SSS

6. 

   SSS

7. **INDIRECT MEASUREMENT** To measure the width of a sinkhole on his property, Harmon marked off congruent triangles as shown in the diagram. How does he know that the lengths $A'B'$ and AB are equal?



   Since $\angle ACB$ and $\angle A'CB'$ are vertical angles, they are congruent. In the figure, $\overline{AC} \cong \overline{A'C}$ and $\overline{BC} \cong \overline{B'C}$. So $\triangle ABC \cong \triangle A'B'C$ by SAS. By CPCTC, the lengths $A'B'$ and AB are equal.