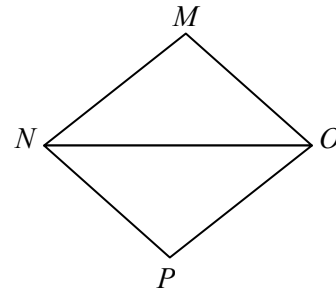


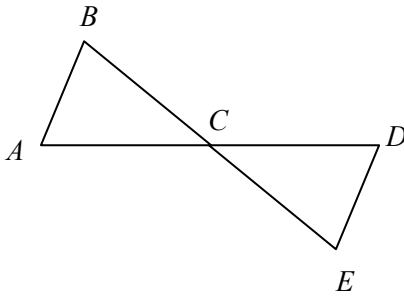
- 1) Given:  $\overline{MN} \cong \overline{PO}$  and  $\overline{MO} \cong \overline{PN}$   
Prove:  $\triangle MNO \cong \triangle PON$



Proof:

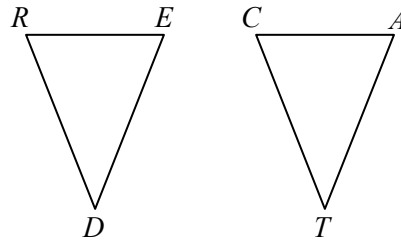
$\overline{MN} \cong \overline{PO}$                       Given  
 $\overline{MO} \cong \overline{PN}$                       Given  
 $\overline{NO} \cong \overline{ON}$                       \_\_\_\_\_  
 $\triangle MNO \cong \triangle PON$                       \_\_\_\_\_

- 2)  $\overline{AC} \cong \overline{DC}$  and  $\overline{BC} \cong \overline{CE}$ . Write a paragraph proof to show that  $\triangle ABC \cong \triangle DEC$

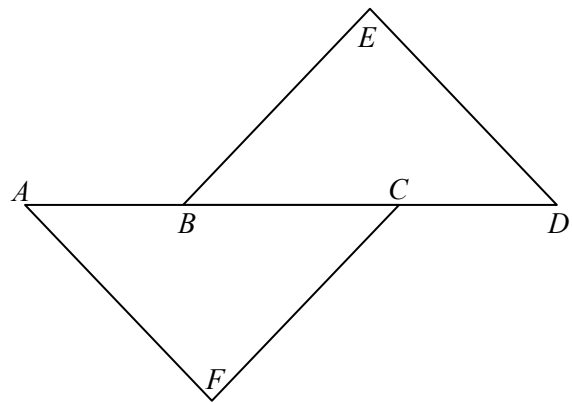


- 3) Given:  $\overline{AB} \cong \overline{CB}$ ,  $\overline{AD} \cong \overline{CD}$   
Prove:  $\triangle ABD \cong \triangle CBD$

- 4) Given:  $\overline{RE} \cong \overline{CA}$ ,  $\overline{RD} \cong \overline{CT}$ ,  $\angle R \cong \angle T$   
 Prove:  $\triangle RED \cong \triangle CAT$

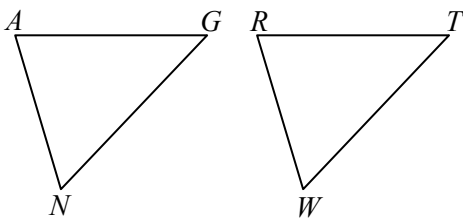


- 5) Given:  $\overline{AB} \cong \overline{CD}$ ,  $\overline{AF} \cong \overline{DE}$ ,  $\angle A \cong \angle D$   
 Prove:  $\triangle FAC \cong \triangle EDB$

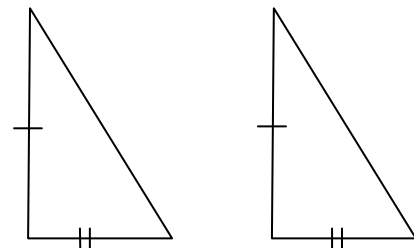


Decide whether you can use SSS or SAS Postulate to prove that the triangles below are congruent. If so a) write the congruence statement and b) identify the postulate. If not, write not possible.

- 6) Given:  $\overline{AN} \cong \overline{RW}$ ,  $\overline{GN} \cong \overline{TW}$ ,  $\angle N \cong \angle W$

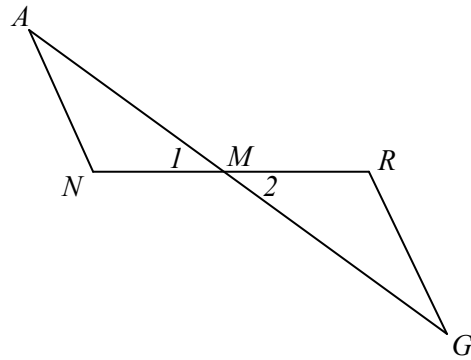


7)



Supply the reasons for the proof below.

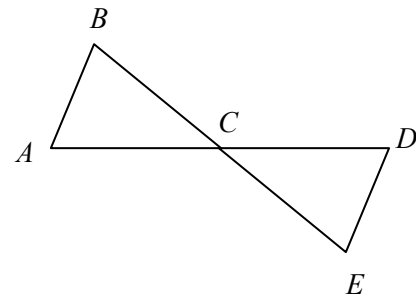
- 8) Given:  $M$  is the midpoint  $\overline{AG}$  and of  $\overline{NR}$   
 Prove:  $\triangle ANM \cong \triangle GRM$



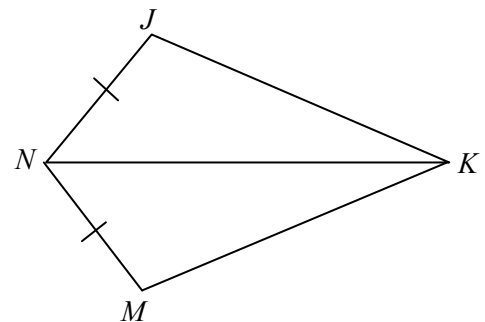
1.  $\angle 1 \cong \angle 2$
2.  $M$  is the midpoint of  $\overline{AG}$
3.  $\overline{AM} \cong \overline{GM}$
4.  $M$  is the midpoint of  $\overline{NR}$
5.  $\overline{NM} \cong \overline{RM}$
6.  $\triangle ANM \cong \triangle GRM$

Write a two Column Proof.

- 9) Given:  $\overline{AE}$  and  $\overline{BD}$  bisect each other  
 Prove:  $\triangle ACB \cong \triangle ECD$



- 10) Given:  $\overline{NK}$  bisects  $\angle JNM$ ,  $\overline{NJ} \cong \overline{NM}$   
 Prove:  $\triangle NJK \cong \triangle NMK$



Answer Key

- 1) Reflexive Property of Congruence, SSS  
 2)  $\angle ACB \cong \angle DCE$  because they are vertical angles.  $\triangle ABC \cong \triangle DEC$  by SAS  
 $\overline{AB} \cong \overline{CB}$  Given  
 3)  $\overline{AD} \cong \overline{CD}$  Given  
 $\overline{BD} \cong \overline{BD}$  Reflexive  
 $\triangle ABD \cong \triangle CBD$  SSS  
 4) Not enough information. Angle t is not included between the congruent sides. Triangles may or may not be congruent.

$$\overline{AF} \cong \overline{DE}, \text{ Given; } \angle A \cong \angle D, \text{ Given; } \overline{AB} \cong \overline{CD}, \text{ Given}$$

- 5)  $AB = CD$ , def. congruent segments;  $AB + BC = CD + BC$ , Addition Prop. of Equality  
 $AC = BD$ , Segment Addition Postulate;  $\overline{AC} \cong \overline{BD}$  def. of congruent segments  
 $\triangle FAC \cong \triangle EDB$  SAS

- 6) a.  $\triangle ANG \cong \triangle RWT$  b. SAS

- 7) Not enough information

- 8) 1) Vertical Angles, 2) Given, 3) Def. of midpoint, 4) Given, 5) Def. of midpoint, 6) SAS

$$\overline{AE} \text{ \& } \overline{BD} \text{ bisect each other, Given}$$

$$\overline{AC} \cong \overline{EC}, \text{ Def. Segment Bisector}$$

- 9)  $\overline{BC} \cong \overline{DC}$ , Def. Segment Bisector  
 $\angle ACB \cong \angle ECD$ , Vertical Angles are congruent  
 $\triangle ACB \cong \triangle ECD$  SAS

$$\overline{NK} \text{ bisects } \angle JNM, \text{ Given}$$

$$\angle JNK \cong \angle MNK, \text{ Def. Angle Bisector}$$

- 10)  $\overline{NJ} \cong \overline{NM}$ , Given  
 $\overline{NK} \cong \overline{NK}$ , Reflexive  
 $\triangle NJK \cong \triangle NMK$ , SAS